This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

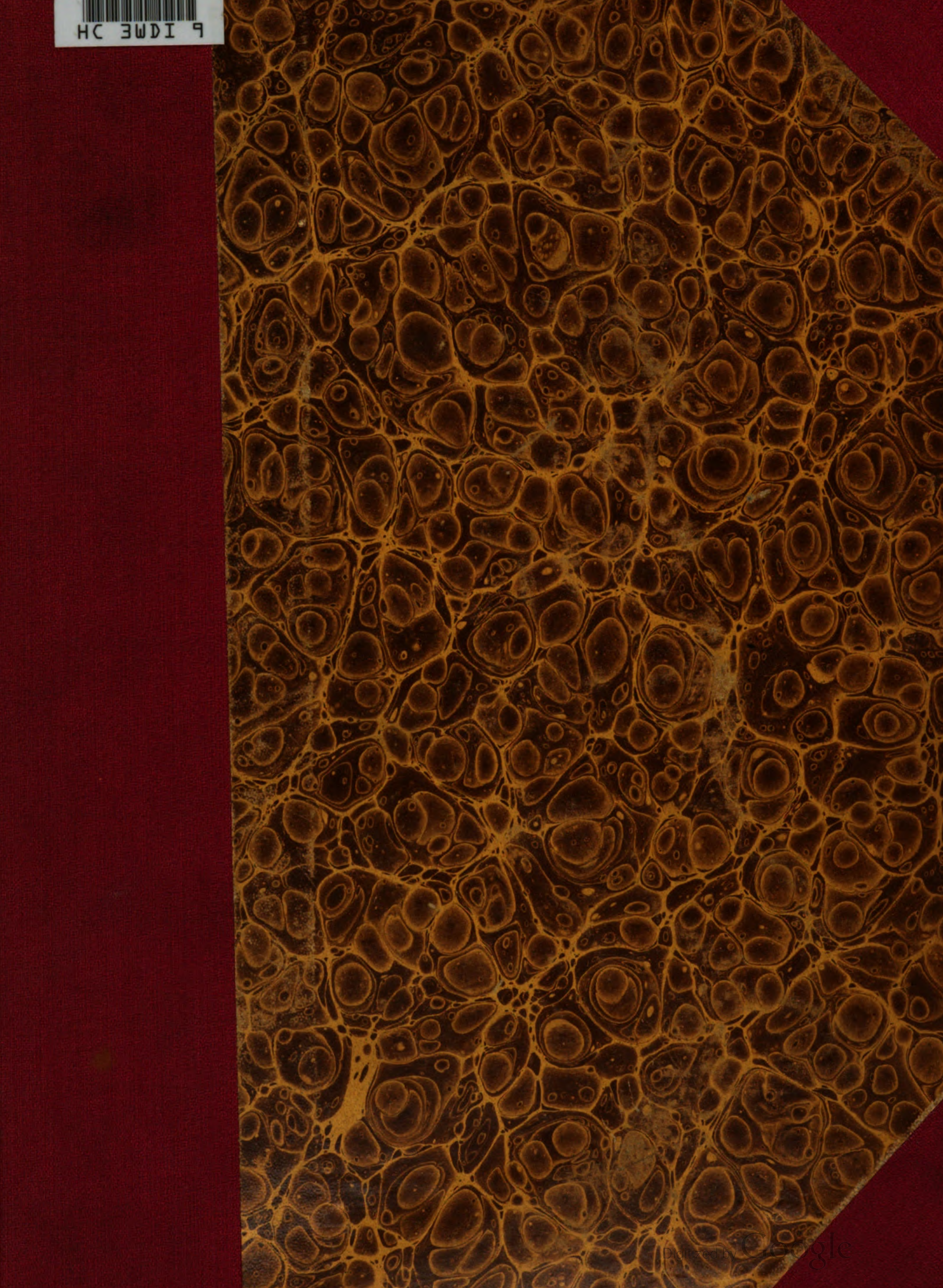
+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`



HC 3WDI 9

BIBLIOTHECA · BOSTONIENSIS · MEDICINAE
SERVAT · ET · DOCET
FVNDATA
MDCCCLXX
EX DONO

NORTHWESTERN LANCET

A SEMIMONTHLY MEDICAL JOURNAL

W. A. JONES, M. D., EDITOR

VOLUME XXIV

MINNEAPOLIS
W. L. KLEIN, PUBLISHER
1904

BOSTON MEDICAL
APR 13 1905
LIBRARY.

CATALOGUED
APR 13 1905
E. H. B.

NORTHWESTERN LANCET
A Semimonthly Medical Journal
VOL. XXIV JANUARY 1, 1904 No. 1

APR 13 1905
LIBRARY.
8662

SURGERY OF THE PROSTATE*

J. Warren Little, M. D.

Professor of Clinical Surgery, University of Minnesota

MINNEAPOLIS

It has long been known that men past middle life are likely to suffer from enlargement of the prostate gland, which encroaches upon the prostatic urethra and neck of the bladder to such an extent that natural expulsion of urine from the bladder cannot take place, so that sooner or later the residual urine becomes ammoniacal from decomposition, or infected from catheterization, producing cystitis, and, finally, injury or destruction of the ureters and kidneys from ascending infection.

To relieve this prostatic obstruction has been the study of surgeons for twenty years past, but more has been accomplished in the last three years than in all the preceding time. The various methods of relieving this obstruction are, or have been:

1. Cauterizing the prostate through the urethra after the method employed by Bottini for thirty years.

2. Enucleation of the prostate, more or less complete, by the suprapubic operation. Dr. Wm. T. Belfield, of Chicago, planned, executed, and put on record two cases in 1886, before McGill published his cases; nevertheless many American surgeons have failed to give our own the proper credit.

3. Enucleation of enough of the prostate to relieve the obstruction to the urinary outflow by perineal prostatectomy, as planned by Dittel and performed by Kocher in 1889.

4. The double castration method, or, as it is called, the Ranney-White method, for the reduction of the gland.

5. The division of the vasa deferentia or vasectomy, as advanced by Reginald Harrison.

The five methods given above, viz., the Bottini, the suprapubic, the perineal, double castration, and vasectomy, with various modifications and combinations, are the ones from which we are obliged to select, and choose for our patients the one safest and most likely to effect a cure in each individual case.

We have not arrived as yet at the complete solution, but with the many good workers now in the field we shall soon be able to obtain reports enough from cases operated upon a sufficient length of time to make comparisons, the result of which will be definite and correct. Already the eliminating process has gone on to such an extent that two of the five methods have been practically discarded, viz., vasectomy and the double castration. The next to be laid aside for better and more surgical procedures will be the Bottini operation. A perusal of the writings of its most ardent admirers shows it to be in less favor, excuses are being made for it, and I am sure only a short time will intervene before the blind, burning operation will give way to open surgery. If this prediction be true, we shall soon have but two methods from which to choose, the suprapubic and the perineal. Of these methods many modifications exist, and it is not likely that all surgeons will ever believe exactly in the same procedure, but each operator will continue with the one giving him, personally, the best results. This is as it should be.

Among some of the modifications of the original operations should be mentioned that of Alexander, who first did the perineal urethrotomy in attacking the gland. Bryson, in 1898, made a perineal enucleation with a suprapubic incision into the prevesical space for counter-pressure, but without opening the bladder above. Symes, in 1899, proposed perineal enucleation, securing counter-pressure by opening the peritoneum above the bladder, but not into the viscus. Several ingenious devices have been made to draw down the prostate into the perineum, making it more accessible. One is a collapsed rubber-ball, with a long stem for a handle. This is passed into the bladder and inflated, and traction is then made, drawing down bladder and prostate. Another is a steel prostatic tractor, much the shape of a catheter, which, after being introduced into the bladder through the perineal incision, can be opened so that as much traction as is desired can be made. Then there are various other things, as lobe forceps, tenaculi, etc., that are advised; but, really, one needs very few instruments, and every surgeon has enough without purchasing any for this operation.

---

*Read before the Minnesota Valley Medical Society, Mankato, Dec. 1, 1903.

For the perineal operation a scalpel, a short-bladed, sickle-shaped, knife, lithotomy staff, artery forceps, Sim's speculum, volsella, stone forceps, and scissors are about as many instruments as are ever needed. For the suprapubic operation much less is required. After the bladder is open, a pair of scissors for splitting the posterior bladder-wall and a good index finger, are usually the chief requirements. Occasionally a rongeur, or cutting forcep, is of advantage. In either operation almost all the work must be done by sense of touch. I may say nothing can be seen from above, and only a small part of the capsule of the gland from below. Traction instruments are only in the operator's way. More can be accomplished in bringing the gland down, by putting the patient in the proper position, viz., by having the thighs tightly flexed on the abdomen, with the buttocks elevated and brought well over the end of the table, than with all the traction instruments one can buy.

We are now confronted by two questions:

In what cases shall we advise operation, and which method will serve us best?

We must operate for cause, not because an examination reveals a large prostate any more than we would operate for a uterine fibroid that was giving no trouble. Many large prostates bulge into the rectum, and give no bladder symptoms. The ones producing obstruction are often high up and difficult to feel. These are also the ones difficult to remove. I would say that a patient without cystitis who needs to use a catheter only occasionally, and whose residual urine can be kept clear by urotropin, can be safely carried along without an operation, for many, I am sure, will never require it.

Operation should be advised and urged in those cases beginning catheter life before infection takes place, which it surely will. Here the surgeon feels the justice of his cause, and believes patients ought to be persuaded, if possible, to take the operation while in good condition, just as in the interum of appendicitis or in the first few hours of an attack.

In acute prostatitis, unless an abscess has formed and must be evacuated, treat the case, and operate, if necessary, after the acute symptoms have subsided, just as you would do in an acute pus-tube case. "Knowledge comes, but wisdom lingers." Let them alone, and you can operate upon them with comparative safety later. Age itself is not a bar to performance of the operation. We find, now that we have learned to get our old people to sitting up very early after operations and get them out of bed soon, that they do as well as other surgical cases. It took us a long time to find this out. We kept them in bed until they were so feeble that they never regained their strength.

MacGowan gives three contra-indications for operations:

"1st. Tendency to bleed freely from very slight injuries.

"2d. The existence of serious heart lesions accompanied by great general muscular feebleness.

"3d. And most important is the inability of the kidneys to secrete a reasonable amount of urea, which is from 15 to 25 grammes per diem."

The first two objections might well be urged against almost any operation, especially a major one. The amount of urea secreted may be of special importance in genito-urinary work. I do not consider that the others are.

We are inclined not to insist upon operating upon middle-aged men before necessity demands it, for the reason that it has been our observation that sexual power is much diminished, and in some cases entirely destroyed by prostatectomy.

Young of Baltimore has been splitting the capsule of the prostate on either side of the seminal vesicles, leaving a middle portion, hoping in this way to preserve the integrity of the ejaculatory ducts. Some writers claim the sexual power is not diminished. If so, Young's operation only adds difficulty to our technic without compensation.

In choosing between the high and the low operation, I would say that, if an examination per rectum revealed the prostatic mass high in the bladder, the suprapubic operation with perineal drainage would be the better; but in the majority of cases the perineal route is very much to be preferred. The gland can be more easily excochleated, the drainage is where you desire it, the perineal wound will close more quickly, and the patient can be made much more comfortable with the drainage below, as the bladder-wall is not interfered with, while it must be opened in two places in the suprapubic operation, which must interfere more or less with the natural vermicular action of the viscus.

As to the technic: A median perineal incision looks the most artistic, and does less violence to the muscles of the perineum; but I have seen no harm result from an inverted V-shaped incision (after Murphy), and believe it is a distinct advantage for one not having performed many prostatectomies, to see, if nothing more, the capsule of the gland, and make a correct entrance into it. I have never been so unfortunate as to open the rectum, but some of my good friends have. Remembering the close proximity to the gland and the curving forward of the rectum into the perineum, I can easily see that with the inverted V-shaped incision great care is necessary to avoid it. I think by keeping well to the apex of your incision, and severing the recto-urethralis muscle, thus letting the rectum drop back, a distinct advantage is gained. If we can do two things,—keep out of rectum and keep within the capsule of the gland,—not much difficulty will be experienced.

In a round cuff-shaped prostate I have seen this entire portion removed with the prostatic urethra running through it measuring at least one and a half inches, and still the patient made a beautiful recovery with no relapses. In another case in removing a middle lobe by the perineal route, I opened the neck of the bladder so that two fingers could be inserted into it, and the patient made a good recovery after draining about a month. These are illustrations of the kindness of nature, rather than of the cleverness of the operator. The Bottini operation can be recommended in carcinoma of the prostate as superior to the open method.

To avoid anuria a hypodermoclysis of normal salt solution should be given at the time of operation, or soon after, and when able the patient should drink freely of water. A large drainage-tube should be inserted into the bladder, and secured by a stitch in the skin, so that it will be sure to remain where you desire it. Some gauze should be packed into the perineal wound, if necessary to check oozing, and the rest of the wound closed. The patient should be put to bed in a half sitting position, and allowed to sit up in from four to six days.

We do not know the cause of prostatic hypertrophy, and therefore have no means of avoiding it. It is said to be caused by gonnorrhea, but as negroes, Indians and Chinamen, whom I have never heard are exempt from the running issue, are said to be free from enlarged prostates, it is only fair to contend that it is another of the "white man's burdens." It is one of the surgical problems that is being rapidly solved, and will do so much for the permanent relief and cure of prostatic sufferers that I most enthusiastically ask you to give it your careful consideration.

THE TREATMENT OF NASAL CATARRH

Mannon finds no danger whatever from the use of the nasal douche, provided ordinary care is taken and a proper solution is employed. The charge that post-nasal douching is prone to excite inflammation of the middle ear he does not find sustained. All leading specialists employ this method of treatment in the posterior as well as the anterior nares with equally good results. The doctor has had chronic nasal catarrh of many months duration yield to douching when heroically employed. Listerine to which a small quantity of bicarbonate of soda has been added is his main stand by. If hemorrhage is a controlling feature he uses instead a saturated solution of tannic acid to each ounce of which ten grains of carbolic acid have been added. When the tendency to bleed ceases he returns to the listerine solution. Treated in this way the most pronounced cases yield in three or four weeks, and are not prolonged by complications or sequelæ.—Cincinnati Clinic.

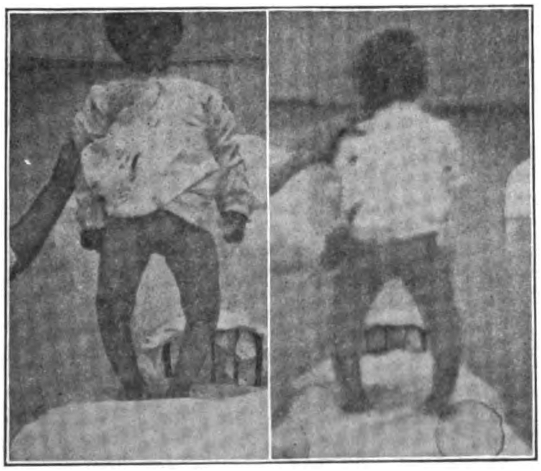
SUPRACONDYLAR OSTEOTOMY FOR BOW-LEGS

By C. J. Ringnell, M. D.

Surgeon to the Swedish Hospital

MINNEAPOLIS

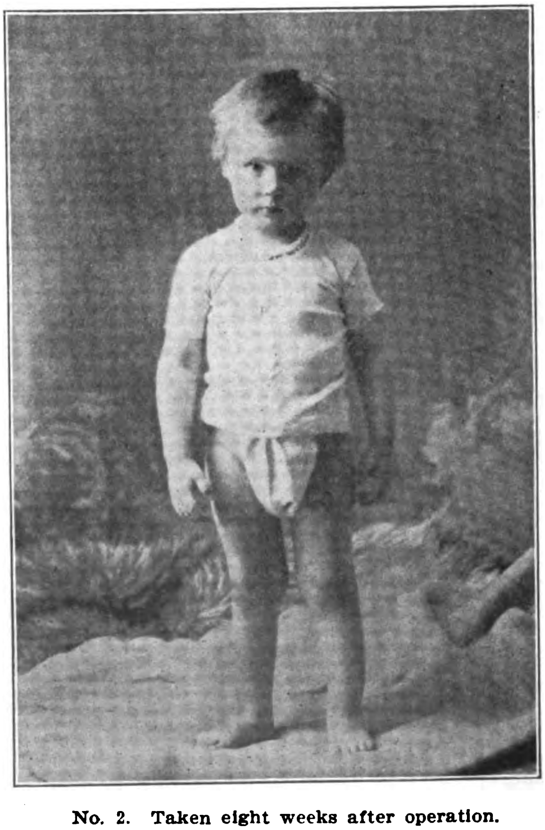
Bow-legs, *genus varum,* is a condition in which there is an outward angular deformity of the knee, or a general outward bow of the legs, so that when the patient stands erect with the heels together, the knees are a greater or less distance apart. This condition is generally ascribed to rickets; but in this particular case there was no evidence of this disease, the family history being good, and the child had from birth been robust and healthy. The legs were bowed at birth, and in all probability this condition had been produced by faulty position in utero. As the child began to walk the curvatures increased, and it was with great difficulty that the little fellow could propel himself.



No. 1. Taken just before operation.

Generally we advise against operation until four years or after. This little patient was only three years, but as he lived in the country and the mother was very anxious to have the deformity corrected immediately, and finding no objection against such a procedure, the operation was performed.

During my stay at the New York Polyclinic and Post-Graduate Schools I had an opportunity of seeing a great deal of this kind of work at the Hospital for Ruptured and Crippled, by Dr. Royal Whitman. I have never seen the osteoclast used in such cases at that institution. Subcutaneous osteotomy was the only operation. It is a very simple procedure, devoid of danger, and yields excellent results. The curvature being the greatest just above the knees, as in this case, supracondylar osteotomy invariably permits of completely correcting the deformity. The limbs are prepared as for any surgical operation. A sand-bag is placed under the thigh close to the knee, and an assistant grasps the parts firmly. A small osteotome is pushed parallel with the long axis of the thigh directly down to the femur,



No. 2. Taken eight weeks after operation.

one finger's breadth above and a little to the inside of the external condyle. The instrument is then placed transversely, and with a raw-hide mallet is driven into the bone. By gradually manipulating the osteotome a semicircular line is cut down to the medullary canal, where less resistance is appreciable. The osteotome is then gently withdrawn, after having cut about two-thirds of the bone, and a pad of gauze placed over the small opening made by the incision of the instrument. The partial or complete fracture is easily effected in most cases by grasping the bone with the hands and forcibly bending it. Should the skin gape a fine cat-gut suture can be introduced. Sterile gauze is laid carefully over the wound. The legs are put in an over-corrected position, and plaster-of-Paris bandages are applied over the hips and all of the lower extremities. It is well to reinforce the plaster-of-Paris bandages by including strips of iron, one-eighth of an inch thick and about one inch wide, as the bandages are applied.

There will be little or no pain after the operation. This dressing can be removed in two or three weeks, the legs inspected, and a lighter plaster-of-Paris dressing put on for ten days or two weeks more. Gentle massage and assisting the little patient to walk about, carefully at first, will invariably complete the cure. Unless the rachitic manifestations are pronounced, braces will not be indicated. The child can be allowed to run about at will in two months.

In the above case there was a slight curvature of the legs also, but it was not deemed necessary to correct this deformity. The illustrations plainly show the good results obtained by the supracondylar osteotomies.

It is now almost a year since the child was operated upon, and the legs are straight and in every way perfectly normal.

CATARRH AND PREDISPOSITION*

By B. M. Behrens, M. D.

MINNEAPOLIS

It is more than a creed that catarrh exists in this country to an alarming extent, claimed by some authors to be fifty, by others seventy-five, per cent of the whole population of nearly eighty millions. The trouble being due to climatic conditions, it follows of necessity that its prevalence varies according to these conditions, and while in the southern part it may not be so frequent, it prevails all the more in the northern part of the United States. Another factor in producing catarrh is undoubtedly atmospheric impurities, to which we all are exposed who live in industrial cities and agricultural communities. The increasing industrial undertakings, which build up densely populated cities with no adequate improvements of streets and alleys, the belching of soot and cinder from our smoke-stacks of mills and factories, railway engines not excepted, and, added to this, frequent winds, which force the dust particles into our nostrils; give us a patent-right to speak of "American catarrh." In the agricultural communities people are no better off. Here workings in the fields and sand-storms contribute their large percentage of impurities to the air—in short, much activity breeds much dust, and we are all bound to suffer for it.

That the impurities of the air play the principal part in causing catarrh is very likely also, for the reason that catarrh manifests no partiality to classes or mode of living. It has as many representatives among the best situated population as among the poor, or those who live by the sweat of manual labor. In daily intercourse with our fellowmen, this observation is always at hand. Most people we meet show the never-failing sign of "catarrh." viz., red-rimmed eyes and sallow complexions. We notice it in their speaking voice,—the nasal twang is specifically American,—the squeaking and hoarse cries from the rostrum and pulpit, the false pitch from the concert-hall, and the subdued hawking in order to remove the irritation of the throat—in short, it gives a many-sided picture of social life, specific to this country in its frequency, while of course no country is exempt. As it does not interest us materially how this country compares with other countries in Europe, I shall only mention the fact that there is, to all appearances, a very distinct difference, in so far as healthy, ruddy complexions are there the rule, while here they are the exception only. The first greeting which meets the new American when, after a stay of some years, he visits his old folks at home, is a "good cry over the lost complexion." He may have gained in wealth, but not in health. Probably as a joke it is attributed to the American pie; some authors seriously slander the cooking, in order to vindicate their theory that bad cooking causes catarrh, when it is in fact the catarrh which causes, not bad cooking, but dyspepsia. Bad cooking is not unknown in other countries, and I dare say that most of the young people from the northern countries of Europe, for example, who come over here strutting with health, have very few well-prepared meals to thank for their ruddy complexions. This much only to dispel the notion that the diet has anything to do with catarrh as a causative factor. No class of people shows, as a rule, more strength and healthy appearance than our sailors, not those of the navy or steamer marine, but those of our sailing vessels, who always live in an atmosphere free from dust, and at most mixed with the vapors from the boiling kettle. Impurities are practically unknown to them, and when it is remembered that their position in life is fraught with many sufferings from climatic vicissitudes, then I am inclined to believe that, in comparison, the rheumatic influences play a very inferior part as causative agents.

---

*Read before the Hennepin County Medical Society, November 2, 1903.

With these few preliminary remarks, I shall now enter upon the pathology of "catarrh" as I see it.

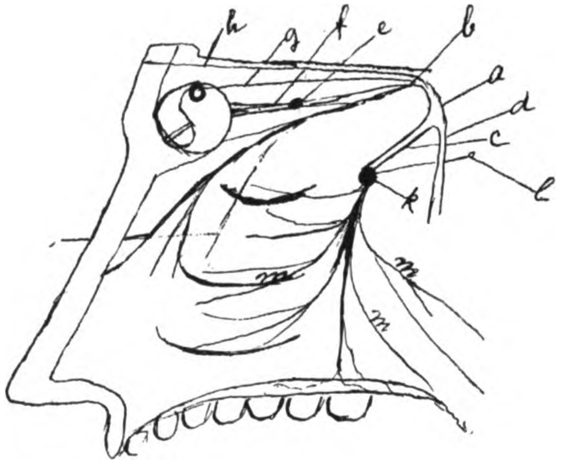
It is common among all to speak of "catarrh" of the head, which is meant to embrace the nose and throat, and we may as well start with the last-named region, as the condition of the throat is of the greatest importance in childhood. The natural channel for respiration and deglutition is small enough of itself, and any encroachment by hypertrophies here is apt to make itself felt to the discomfort of the child. The first question now before us is: How does hypertrophic tissue-formation occur in the child? A common belief is that a scrofulous diathesis, or hereditary predisposition, is the causative factor. This would be well enough if the hypertrophies were found only in children with these taints; but children in every respect perfectly healthy and of healthy parentage are not always exempt. Here the theory of rarefaction of the air in the nostrils is mustered up to account for it. And even if we had any rarefaction to deal with, how would that affect the faucial tonsils? Hypertrophies of the pharyngeal and faucial tonsils are sometimes seen in children with cleft-palate, and here is at any rate no rarefaction of air. That exanthematic diseases of childhood act as causative agents as well as the impurities of the air, is a theory that better meets all requirements than any other, as will be evident later on, and the hereditary predisposition will be allowed as a secondary factor, inasmuch as this means a disturbed vitality of the lymphatic system.

Twenty years ago, when I came to this country to practice medicine, I was requested by our late lamented Christian Fenger to make investigations among the Indians in regard to the frequency of adenoids. Fenger, who had been assistant in Wilhelm Mayer's clinic, of adenoid fame, had from him received the same request. A few visits to the Indian reservations and observations at different gatherings of these people convinced me that this face-wrecking attribute was practically unknown among them. Their regular, large features; clear, lustrous eyes; and set lower part of the face, which as to character indicates determination, clearly prove it. The determination is more an expression of habitual nose-breathing than a sign of mental fortitude, and is due to the manner in which the parents protect their 'pappooses' against the inclemency of the weather. Tucked up in clothes to the chin, this is not allowed to sag, and these "bundles" are consequently forced to breathe through the nose. We must admit that this forced habit of nose-breathing is more beneficial to the health than allowing a buccal or mixed respiration, with all the injuries to the respiratory apparatus this involves.

Another factor, potent in the same direction, is the nature of their surroundings. As the Indians do not have to raise the dust in order to find sustenance, but spend a *dolce-far-niente* life "in God's nature with verdure clad," they are not troubled with atmospheric impurities, and catarrhal affections are rare. I may, therefore, be allowed to let my theory of dust particles of the air causing hypertrophies stand. The *modus operandi* is the following: Dust particles striking the mucous lining of the nose and throat set up a local inflammation, which may result in an epithelial abrasion or increased tissue-formation; in either case the cicatricial or hypertrophic tissue causes an irritation of the sensitive nerve filaments, and this again, an increased blood-supply. When first started, the hypertrophies are undoubtedly further enhanced by the mechanical irritation to which they are exposed by the deglutition. Repeated colds, with increased congestion to these parts, contribute also to their enlargement, and by the time puberty is reached the hypertrophies have, as a rule, attained their maximum. In dyscrasic children they often remain out over this time, while it is an almost invariable rule that, where there is no such taint, they begin to shrink. The hypertrophies in the nostrils begin at this time to make themselves felt. So far as such ordinary disease-symptoms as colds, with affections of the throat and the rest of the respiratory system, are concerned, the predisposition has been there all the time, but severe painful reflex manifestations, characteristic of manhood, have only occasionally appeared, for the reason that the tissues are more pliable, and yielding to hyperemia. The tissues of the nostrils and throat become now more tense and unyielding to irritative congestion,—principally the fibrous tissue in the nasal cavities and the pharyngeal facia,—and the reflex symptoms extend farther than to a sneeze or a little cough. That there are many exceptions to this rule is evidenced in practical life by the number of eye and ear affections of childhood, and also of affections of the respiratory tract, which are due to reflex hyperemia from the nasal cavities.

In order to produce reflex phenomena, an irritation of a sensitive nerve is required, which conveys this to a central organ, and this again communicates it to a peripheral sensory, motor, or sympathetic nerve in the same or a distant locality. To quote Bosworth: "A local morbid condition of one portion of the body creates an impression, which is conveyed to a nerve center, from which there is transmitted to an entirely different locality in the economy a certain force, by which there is generated in that locality either a pathological lesion or a train of morbid symptoms. The mucous lining of the nose contains the most delicately sensitive nervous organization of any portion of the respiratory tract. We should naturally, then, expect it to be a frequent source of reflex phenomena."

In the following it shall be my aim to explain this morbid condition as I see it, and in order to make it plain it will be indispensable to recall some anatomical and physiological facts.



SCHEMATIC DIAGRAM: (a) Ganglion Gasserii; (b) nervus ophthalmicus; (c) N. maxillaris superior; (d) N. maxillaris inferior; (e) ganglion ciliare; (f) nervi ciliares; (g) N. lacrymalis; (h) N. frontalis; (i) N. naso-ethmoidalis; (k) ganglion spheno-palatinum; (l) N. Vidianus; (m) nervi spheno-palatini.

The nostrils, nasopharynx, and pharynx are supplied with sensitive nerves from the trigeminus, which, from the Gasserian ganglion, ramifies in its three branches, the ophthalmic, superior, and inferior maxillary nerve. The nerves with which we shall be specially concerned are the naso-ethmoidal, which sends filaments to the ciliary ganglion, sclerotica, choroidea, retina, and the central canal of the optic nerve, and another, which ramifies to the outer aspect of the nose, conjunctiva palpebræ, lacrymal gland, and, besides, an internal to the septum and ethmoid.

The superior maxillary nerve supplies through the sphenopalatine ganglion the whole inside of the nasal cavities, nasopharynx and pharynx, and through the Vidian nerve ramifications to the middle-ear. As to connections with filaments from the lingual, glossopharyngeal and pneumogastric nerve, I shall refer to the anatomical textbooks.

The sympathetic nerves follow, as a rule, the arterial system, and their purpose is to control the vessel tonus. The center of this control is located in the medulla oblongata. The ganglia receive, record, send out, originate nervous impulses, or give rise to psychical activity.

An irritation of a sensitive nerve is followed by a contraction of the artery, while a chronic irritation causes a paresis of the same, and consequently dilatation and hyperemia. Continued dilatation weakens the artery walls and the capillaries, and transudation of serum takes place, with subsequent incohesion of the epithelial tissue.

The above-mentioned morbid condition is found in all individuals who exhibit a tendency to repeated colds or to morbid sensory or motor reflexes in the respiratory tract or in the eye and ear. It is not observed in individuals who do not exhibit such tendencies. Where it exists the slightest touch on different parts of the nostrils calls forth a tickling and painful sensation, which results in sneezing and lacrymation, the well-known phenomena characteristic of a beginning cold. Here we have the best illustration of the reflex action on all three sorts of nerves,—the sensory, motor, and sympathetic nerves. The fact that these symptoms of reflex action can be called forth only in hypersensitive nostrils points to an underlying cause, which clinically manifests itself only when injury is added to the already existing morbidity. The tenderness to pressure, which is always present and observed principally on the middle turbinal, different parts of the bony septum, and external wall of the nostrils, tells a tale of constant irritation of the sensitive nerves, the ultimate result of which must be a fagging out of the central organs, viz.: a paresis of the sympathetic nerves, with increased dilatation of the arteries and hyperemia, which again increases the irritation of the nerves, viz., a "circulus vitiosus."

Under ordinary circumstances this morbid condition gives no manifestation of disturbance, but as soon as an injury directly or through the sympathetic system strikes this diseased part, a duplication of the reflex symptoms, which I have called forth by pressure, occurs. First, there is increased irritation of the sensitive nerves, which causes a contraction of the arteries, succeeded by an increased dilatation. Where the tissues yield to the increased hyperemia, a transudation of serum and leucocytes follows, which manifests itself in a flux only, or organization of new tissues takes place—hypertrophy or hyperplasia—or the capillaries break down, and atrophy or suppuration, with subsequent cicatrization, occurs. In case of resistance of the tissues the increased hyperemia causes pain. That this is actually the cause is best evidenced in panaritium, for instance. The pain is most intense in the first stadium, before tumefaction, viz.: before the exudation has broken through the fibrous tissue. The same symptoms are exhibited in a chronic periostitis, with the only difference that where the affected part is spared all irritation—by not moving it, for instance—the sensations of periosteal irritation are absent or moderate. Exactly the same phenomenon meets us here in the morbid condition of the nostrils. In a mild climate and pure atmosphere there is no rheumatic and traumatic injury, and the morbid condition is not aggravated; while a severe climate, with its shifting temperature and movements of dust-laden air, causes an increased irritation of the already morbid nerves. The morbid condition spreads, and not only in the vicinity, but also in distant localities, do the sympathetic nerves become involved.

I shall now present some of the most important localities which suffer circulatory disturbances from irritation of the nasal nerves. Some are accessible to visual inspection, others give, clinically, evidence of the fact.

The best observable and earliest manifestation of cause and effect is hyperemia of the throat, and this is most significant on the palate. Where even the most limited tenderness in the nostrils is present, hyperemia of the palate is distinct. The clinical manifestation of a sneeze produced by the slightest irritation of a morbid sensory nerve is hereby explained, inasmuch as a new irritation causes an increased hyperemia of the nerve-sheaths of motor fibres from the maxillary nerve, and a contraction of the palate muscle takes place.

Hyperemia of the conjunctiva palpebræ, which is so common that we are justified in the belief that most people are afflicted with "catarrh," is due to an irritation of the naso-ethmoidal nerve, which, as above explained, sends filaments to the superficial tissues of the eye. The nasal irritation is here reported along the nasal branch of the nasociliary nerve to the Gasserian ganglion, and reflected along the branches to the external part of the eye, while hyperemia of the deeper tissues of the eye is likely the result of the irritation traveling through the ciliary ganglion, and from here reflected further along the retinal and ciliary arteries.

The following case seems to demonstrate this proposition: "Young lady, in perfect health, has been practically blind in the right eye the last four days. At a distance of two feet she perceives my moving fingers in the peripheral field, but the central field is perfectly dark. Cornea is clear, pupil somewhat dilated, reacts slowly on direct light, and retina easily inspected without atropin. The retinal vessels conspicuously enlarged and the whole retina highly red. After a few cauterizations on tender spots in the right nostril, the vision began to improve, and after a week, it was as good as in the other eye, or normal. Has been well ever since, almost a year."

Hyperemia of the middle ear, which is most conspicuous along the upper rim of the annulus tympanicus, manubrium mallei and on the promontorium of the inner wall, provided the drumhead is transparent enough to allow of such inspection, is due to irritation of the tympanic plexus by way of the Vidian nerve. This plexus is formed by the conjunction of twigs from the trigeminus, glossopharyngeal, and plexus caroticus of the sympathetic.

Hyperemia of the integuments of the nose, either as a capillary injection or enlarged arterioles on the nasal wings and very often on the cheeks also, is due to irritation of the external nasal, a branch of the nasociliary nerve. Although hypermia of the meningal arteries to the dura mater is beyond visual inspection, I shall, for the sake of argumentation, and because headache is one of the most frequent symptoms accompanying "morbid condition" of the nostrils, include it in this survey, and demonstrate that it is due to nasal irritation also. A heavy pressure on the hypersensitive spots of the nostrils provokes sneezing, nasal flux, photophobia, lacrimation, tinnitus, fulness in the ear, and throbbing headache. This is identical with the symptoms of a severe cold or an influenza. It has been my fortune to observe hyperemia in these different localities in patients who have been victims to these exaggerated reflexes, and also to remove it by cauterization of tender spots in the nasal cavities. When I add to this the information that it has brought decided benefit to vision and hearing, besides removing predisposition to colds, then I do not hesitate to regard the chronic hyperemia as the underlying factor of predisposition to pathological reflexes, and the irritation of the sensitive nerves as the principal cause.

Before leaving the immediate vicinity of the irritation, I shall call attention to trigeminus neuralgia, as being an affliction which has for fundament the same pathogenesis. My clinical experience is limited to infra-orbital neuralgia, which in two instances has been relieved by cauterization in the nose. The pitiful picture of removal of the Gasserian ganglion and the cervical sympathetic ganglia in order to combat this affliction, shows a praiseworthy zeal on the part of surgery to alleviate suffering, but it shows also at the same time how little is known about the affliction itself. Not better is the latest proposition to enlarge the infra-orbital orificium by chiseling away some of the osseous encasement, because the pressure on the nerve may be anywhere in the infra-orbital canal.

Having now presented the different localities in which hyperemia is traced back to trigeminus irritation, I shall try to demonstrate that the effect of nasal irritation may reach the arterial system in distant localities. The best evidence of this being a fact is bronchial asthma, the real nature of which is an irritation of the bronchial motor twigs of the great pneumogastric nerve, and this again, due to vasomotor paresis, with hyperemia of the nerve sheaths. That the spasm can be eliminated by cauterization of the sphenopalatine nerve filaments shows evidently that the irritation is the causative factor.

"A lady of seventy years of age had been suffering from asthma for a number of years. She mostly felt a constriction in the lower part of both lungs. The physical signs characteristic of asthma were present, and in both nostrils was found excessive tenderness on the middle turbinal, with considerable hypertrophy. A mass removal, with part of the bone, thereby securing release of pressure on the septal nerves also, relieved her at once, and for a long time afterward she was entirely free of asthmatic attacks. Another case, which shows the necessity of entire removal of irritation is the following: Farmer, 68 years of age, has had asthma for about thirty years; and has found relief only in smoking remedies. The sonorous and sibilant râles are heard all over the chest cavity, and inspection of the nostrils reveals the presence of polypi. After their removal the patient felt more at ease, but the râles remained. Cauterization was now started, and all tender spots were cauterized, with total disappearance of both subjective and objective symptoms. He wished now to return to his home, but was persuaded to remain under observation for a couple of days. The very day he was ready to go another examination revealed a sibilant tune in the left fossa infraspinata, which was immediately squelched by cauterization of a limited tender spot on the left middle turbinal. The cautery point had been applied here before, but a small nerve filament had probably escaped the touch."

I think that no better evidence than this can be presented of bronchial asthma being due to nasal irritation, and the severity of the paroxysm proportionate to the amount of involvement of the nasal nerves. This brings us close to the question: Of what nature is pneumonia? Is it a reflex vasomotor paralysis, or is it a bacterial disease? While I know of nothing worth mentioning in favor of this last-mentioned theory except prejudice and the pneumococcus—which exists also outside of pneumonia—the first theory gets its strength from the fact that the disease is lobar, viz., the vasomotor paralysis takes place in that particular lobe in which the irritation of the pneumogastric nerve filaments has already established a certain degree of vasomotor paresis. Besides, there can be no other factor in producing exudation in the lung cells than the sympathetic nerves, and, left to choose between the two,—pneumococcus and irritation of the sensory nerves of the pneumogastric,—the choice cannot be difficult. Furthermore, we cannot assume that the pneumococcus can invade healthy tissue, but a preparatory stadium of vasomotor paresis with hyperemia is an absolute "*conditio sine qua non.*" And if we have paresis then we do not need the pneumococcus to explain a higher degree or paralysis, and consequently is the role which the pneumococcus plays secondary or none at all. We may also ask, "Why should pneumonia be lobar only if it is a bacterial disease, and why should it repeatedly recur in the same individual if it were bacterial, inasmuch as immunity ought to have been established with the first attack?"

Another reminder of the nasal origin of pneumonia is the eruption of herpes nasolabialis, a symptom as frequent here as in gastritis, and signifying an intimate correspondence between the nasal and pneumogastric nerve filaments. Much more might be adduced in support of my theory of vasomotor paresis being the fundamental pathogenic condition of pneumonia, but I shall mention only two factors more as favoring the issue, viz., deficiency of the inhibitory centers of reflexes, and weakness of the arteries, "Pneumonia potatorum."

The temptation of applying the same reasoning to the cardiac and cerebral sympathetic is very strong, but having no clinical experience beyond palpitation and headache being benefited by removal of nasal irritation, I shall only express the wish that co-operation on the part of my confreres will, in future investigations, enable us to establish as truth, what is now almost a positive conviction, that also these parts of the arterial system may suffer paresis from the same cause.* And, now, after having demonstrated as fact that the nasal irritation may cause vasomotor paresis in distant localities—bronchial asthma is a distant effect and always removable by removal of nasal irritation—I shall revert to that region which has been the principal guiding-star in the course of my clinical observations, viz., the throat.

As every rhinologist knows, an application of cocain and adrenalin stimulates reflexly the sympathetic centers, and a contraction of the arterioles, with disappearance of hyperemia, occurs. This is most pronounced in the nostrils, less so in the throat. A cauterization of the tender spots in the nostrils gives a further stimulus to the reflex centers, and a blanching, almost ischemic effect in the throat shows the force of the stimulus. Where the irritating points are destroyed, the natural rose color of the mucous membrane is established, no matter what degree the hyperemic discoloration has assumed. This is most obvious in an affliction of the throat, which has always been considered one of the most stubborn to local treatment, viz., follicular pharyngitis. This is characterized by a more or less pronounced hyperemia of the pharynx, dotted with berry-like red elevations, hyperemic follicles. Sometimes there is on top of these elevations a yellow little dot, of the size of a pin-head, signifying that the hyperemia has resulted in a capillary exudation.

---

*What better explanation can be given of the occurrence when any one in the prime of life and apparently in the best of health is suddenly stricken down with cardiac failure or cerebral apoplexy?

A removal of the irritation of the sphenopalatine nerves in the nostrils will cause a blanching of the whole mucosa, and the berries are now seen more distinctly on the white background. If the irritation is entirely removed, the red color of the berries will disappear also.

And now it shall be my aim to prove that the underlying factor in the morbid condition of the nasal cavities is a chronic periostitis and perichondritis. I have mentioned already that the excessive tenderness in the periosteal part of the nostrils is present only in individuals who show any tendency to pathological nasal reflexes. This is enough, but there are other proofs; as, for instance, there is no necessary relationship between adventitious tissue-formation and nasal reflexes. Asthmatic patients may not complain of any local impediment to nasal respiration, while others are subjected to difficult nasal respiration, and never have an asthmatic attack. Or patients may take cold easily, although respiration is entirely free. Nay, even patients with ozena are subjected to the same predisposition to pathological reflexes. Objectively, we may detect an hyperemic condition only of the nasal cavities, principally marked on the middle turbinal, and still a disturbance of the circulatory system of the throat, eye, and ear be present.

One fact more, and I am through. At any time, summer or winter, a pressure on tender spots in the nostrils will produce sneezing, lacrymation, palpebral and bulbar congestion, nasal flux, frequently throbbing headache; in short, the whole mechanism of the central reflex action will be manifest. It is absent in individuals whose nostrils evince no pain on pressure.

CONCLUSION

Removal of irritation of the nasal nerve filaments restores the vessel tonus in the upper respiratory tract, eye, and ear; consequently hyperemia and all functional and pathological disturbances due to hyperemia are primarily due to irritation. The cause of this is hypertrophic tissue formation, which presses upon the sensitive nerve filaments in the periosteal as well as in the perichondrial part, and which I have, for want of a more concise term, called periostitis and perichondritis. As a chronic inflammation of periosteal and perichondrial tissue, it probably does not exist.* A direct or constitutional injury to these parts causes an exacerbation, with inflammatory symptoms of exudation, disturbed nutrition of tissue, either as hyperplasia, hypertrophy, or destruction. A return of the vessel tonus towards its former state is indicated by the cessation of all inflammatory symptoms, and hyperemia, with succulence of the tissue due to transudation and increased mucous secretion from the glands, remains as before the storm, plus material for formation of more hypertrophic tissue.

Herein lies the explanation of impairment "of the morbid condition in a severe climate." An epithelial mucous membrane cannot, in its whole extent, be materially altered by a local cauterization, and it is therefore self-evident that, if normal physiological conditions can be established by this agency, the fundamental pathological trouble can be nothing more than hyperemia, no matter whether the exacerbation of irritation produces a coryza or pneumonia. This uniformity of pathogenesis of all functional and pathological affections of the upper respiratory tract, eye, and ear, expresses, therefore, pathologically, the same thing: a "reflex vasomotor paresis." That this reflex paresis may take place in distant localities is best evidenced in bronchial asthma. The bronchial muscles derive their motor nerves from the great pneumogastric, and the observation that this spasm can be eliminated by removal of irritation of the nasal nerve filaments not only testifies to the transmission of irritation, but the same pathogenesis of paresis is demonstrated by the fact that as soon as the bronchial spasm is perfectly eliminated the vessels will begin to unload their burden of hyperemia by a bronchial flux, which only ceases when the vessels have regained their physiological tonus, a process analogous to the nasal flux in coryza.

My clinical observations do not extend far beyond what I have here presented, but predisposition viewed in this light and verified by therapeutical results will justify the inference that not only the thoracical, but also the abdominal vessels may be under the baneful influence of nasal irritation. To assume that only the motor fibers of the bronchial nerves are affected would obviously be too absurd. That the cerebral vessels may be affected in the same manner and from the same source I consider unnecessary to theorize upon.

---

*Possibly it is more correct to call it a perverse molecular derangement of the nerves, which makes them susceptible to impulses, from within or without, which healthy nerves would not be likely to report to the central organs.

In regard to the individual variability of paresis as to localizations, I have no theory to offer except what I have already mentioned under pneumonia. The physiology of the centers of inhibition of reflexes is so little known except by inference that any theorizing on their pathology would bear but little fruit. I shall only make the suggestion that here may possibly be found also the explanation of inherited predisposition as well.

If my theory of irritation and vasomotor paresis constituting the pathogenesis of functional and pathological disorders, be correct, then it is obvious that *the theory of inflammation by continuity of tissue becomes obsolete,* and *the theory of chronic inflammation shares about the same fate.*

Life itself seems to give evidence of the correctness of my views. With increasing age, atrophy of tissues sets in, pressure on the sensitive nerves decreases, and the vessel tonus improves, which fully explains the frequent observation that predisposition to colds disappears, and spontaneous improvement of vision and hearing occurs, what popularly is ascribed to providential intervention. Such occurrences would be unaccountable if the anomalous condition were anything more than a temporary disorder of the sensory and sympathetic system.

Having now explained the predisposition to colds and other reflexes, it remains but to call attention to another feature of the vasomotor disturbance, viz., the chronic hyperemia of the mucous membrane in the upper respiratory tract. A certain amount of transudation of serum constantly going on can have only a weakening effect on the cohesion of the epithelial tissue, which is further enhanced every time an injurious rheumatic or traumatic attack on the sensitive nerve-filaments brings on an increased hyperemia. Consequently this protective wall against bacterial invasion is weakened. Clinically, we observe this in an epidemic conjunctivitis, for instance, where only one eye is affected—the hyperemic—or one child in a family of more children is affected. Can predisposition to a local bacterial disease be more clearly explained on any other or more plausible theory?

Bacteria which enter the system and produce general infection find their most favorable soil in the throat, for the following reasons: The mucous membrane of the nasal cavities is supplied with a ciliated epithelium, which, in conjunction with the constant respiration, prevents lodgment here, while the mucosa of the throat has only ordinary squamous epithelium, and is, furthermore, richly supplied with lymph follicles; besides, this part of the respiratory tube is wider than the rest and allows of a certain stagnation of the air-current. Furthermore, the throat being the entrance also to the alimentary tract and constantly visited by any number of bacteria, and the propagation of pathogenic germs furthered into the lymphatic system by every aspiration of the thorax, I think we have every reason for regarding this locality with suspicion.

Herewith, and with little hesitancy, I present to the medical fraternity the *"locus minoris resistentiae,"* the upper respiratory tract.

The battle-cry of to-day against tuberculosis is "pure air and nourishing food." My battle-cry against this and all other bacterial infections is: "Away with congestion."

TREATMENT

The aim of our intervention must be restoration of normal vessel tonus, and this can be effected only by eliminating irritation. In childhood the removal of adenoids and hypertrophic tonsils is of paramount importance, in order to remove irritation of the palatine and glossopharyngeal nerve filaments. Later in life (the youngest child in whom I have applied the cautery point in the nostrils was eleven years of age) cauterizations in the nostrils will be in order. While the limited tenderness to pressure is a good indicator of the localities which need the cautery point, the vision may also help us in a great number of cases to locate the tender spots. It is a matter of course, previous to cauterization, that we apply cocain and adrenalin, in order to anesthetise and exsanguinate the mucous membrane. We will then find that some places resist the exsanguination; in other words, an injection remains, and these are the places where the sensitive nerve filaments suffer a pressure of the tense fibrous or periosteal tissue. Cauterization in the nostrils always being succeeded by a febrile reaction and constitutional malaise, it is advisable to limit it in one sitting to a few points, the next one to take place after an interval of one or two weeks. With an inert powder inflated on the cauterized spots, it can safely be left alone, with no meddling of sprays or powders afterwards.

It is obvious that materia medica has no remedy for irritation.

EPICRITICAL REMARKS

In presenting this communication to the medical profession, after but little more than three years of observation, I am well aware of its imperfectness. The subject is too overwhelming for me to do it full justice, but I trust that rhinological observers will verify my principal claim that hyperemia is the fundamental pathological condition, and that this is due to nasal irritation. For the reason that this is the most important and far-reaching factor in functional and pathological disturbances, I have paid but little attention to other localities, for instance, the pharyngeal fascia, but it is evident that irritation here may arise also from hypertrophies, the importance of which is testified to by the frequent sad issues, of a rheumatic sore throat, which undoubtedly are a result of affection of the cardiac branches of the pneumogastric nerve; in short, the upper respiratory tract, the nose, and throat, involve such a rich sensitive nerve-supply, always exposed to rheumatic, traumatic, and bacterial injury, that in the same proportion as this is affected are health and life imperiled. To this fact is conversely testified by the great improvement in general health and appearance after the removal of all irritation which has led to retrograde changes in the mucosa of the throat and nose, the best evidence of the *non-existence of catarrh*

As regards my claim that hyperemia weakens the cohesion of the epithelial tissue, and lays it open to bacterial invasion, I admit this to be a suggestion only, but in comparison with the contention that catarrh constitutes weakness it is infinitely more plausible, inasmuch as the hyperemic transudation, which is not resorbed in the lymphatic spaces, penetrates the epithelium, and appears on the surface. That the throat is the only port of entrance of bacteria, be it far from me to contend; on the contrary, any locality in the respiratory and alimentary tract, if hyperemic, involves the same danger; only the throat is, for reasons mentioned above, to be considered the main "locus minoris resistentiæ."

In this connection I shall present an illustration from my practice which will endorse my suggestion. Husband, wife, and three children were taken down with diphtheria, while a fourth child, a boy of eleven years of age, escaped the disease, although he faithfully executed the duties of attending to those stricken, as well as he could. This boy had, some months previously, his adenoids and hypertrophic tonsils removed. This observation may be duplicated by the medical practitioner, and needs no further comment, except the explanation that by removal of those irritating products has the transudation disappeared, and what was a sieve before has now become a solid, relatively, protective wall against bacterial invasion.

I feel that I owe an apology for classifying pneumonia under reflex disorders, inasmuch as it has taken strong hold on the medical mind that it is primarily a bacterial disease. I have already given several reasons for regarding it as due to reflex, and shall add another which will further corroborate my theory, namely, a typical croupous pneumonia lasts as long as a coryza—about a week. In other words, it takes the arterial system of a lobe as long to recover its former tonus as is required for a return of the former condition of the arterial system of the nostrils. Medical literature is so rich in reports of the most varied affections being benefited or eliminated by intranasal treatment that I would not even think of beginning to enumerate them; neither do I think it necessary to report cases of my own in which the cauterization of the tender parts of the nasal cavities has removed hyperemia of the eye, ear, nose, and throat. I trust that when the irritative element shall be recognized as the true cause of vasomotor, sensory, and motor disturbances, the abundance of clinical evidence will be so overwhelming that the conclusion will be forced upon us, not only that functional and pathological disturbances are due to the sensory and sympathetic systems, but that the upper respiratory tract is their main source.

In regard to the treatment which I have recommended, I can only express my regret in having nothing better to offer than the destruction of the irritated nerve filaments.

NORTHWESTERN LANCET
A SEMIMONTHLY MEDICAL JOURNAL
The Official Organ of the Hennepin County Medical Society
W. A. JONES, M. D. .... EDITOR
Editorial Office, 515 Pillsbury Building
W. L. KLEIN, PUBLISHER
SUBSCRIPTION, $2.00 A YEAR.
839-840 Lumber Exchange .... Minneapolis

JANUARY 1, 1904

THE LIGHT OF THE WORLD!

A new light has begun to shed its radiance at so much per shed.

The latest is a device that claims to embrace all of the best features of the *x*-rays, violet rays, and sun rays.

It is so powerful and searching that it does not clearly illuminate the structures of the human frame, as do the *x*-rays, but it passes on and through, and with its course kills all germs, and urges all disease products to cease their evil ways, and depart henceforth that the normal and healthy tissue may again resume its sway! It will cure anything from piles to harelip, from itch to consumption; and, what is most encouraging, it will cure it as effectively as the average get-rich-quick scheme will produce wealth. One or two treatments are enough for a pleurisy with effusion. A minute or two under light, will cure a neuralgia, the cause being immaterial.

What has our long-suffering and hard-working profession done to this earthly promoter of lights that he should step in and cure all known and many unknown diseases, and thus deprive us of our future prospects?

The light specialist is the last straw. At one time a complaining practitioner grumbled at the variety of specialists. Every organ in the body, he said, had its own specialist, and that nothing remained for him but the navel. He was crushed into a demented pulp when some one reminded him that this field was already covered by the *naval* hospitals!

Perhaps these new light cures will not look so optimistic to our pessimistic eyes after a few tough cases bump against this new remedy, and decline to believe they have been cured, although they are almost persuaded by financial cure-all-promoters.

This new apparatus will undoubtedly be brought to your notice in due time.

Don't pay too much for the decorations and trimmings.

EPIDEMIC DISEASES

An epidemic of pneumonia in the cities of Philadelphia and New York has inspired the health officers to order each case reported to the department, classing the disease as infectious and communicable.

In the present-day knowledge of bacterial diseases, every acute illness due to micro-organisms must find its place among the classified diseases. The danger of the communicability of pneumonia has been underestimated. In the lung a certain condition exists in many persons which favors the growth and development of the pneumonia coccus of Fränkel, which acts as a carrier of the infection. Eichhorst states that almost four per cent of the community are attacked annually by pneumonia.

If this is a correct estimate, it is time that pneumonia be classed as an infectious and preventable disease. The department of health should add measures to control the spread of disease, and the attending physician in each case should advise the remainder of the household that every necessary precaution be exercised in the care of the patient and in the sick-room to limit the excursions of the bacilli. If precautionary measures are essential in cases of tuberculosis it is equally advisable to exercise the same skill to arrest the infection of a pneumonia. A feeble or robust individual with a subsoil suitable for an infection burdened with a pneumonia, is often left with an ara of lung-tissue ripe for the tubercle-bacillus.

The public must be educated to look to the health department with more confidence to assist it in its efforts to prevent and control disease. The transmission of disease from one person to another or through the intermediation of a third person is recognized by all clinicians, hence diseases dependent upon scientific sanitation can be prevented only by extreme rigidity in the observance of health department rules. The more the people thoroughly understand the possibilities and the far and unexpected results of infective processes the more readily will they aid in their suppression. The case of Cuba and the stamping out of yellow fever to such an extent that no cases have originated on the island for three years is a striking illustration of what may be done by rigid sanitation.

Dr. Frank Burr Mallory, the associate professor of Pathology at Harvard, who has discovered a protozoön in the epithelial cells of the skin and tongue, and in the superficial lymph vessels and spaces of the corium, considers that the cause of scarlet fever has at last been disclosed. Dysentery with its bacillus and its generating toxines has been accepted as a conclusive cause of an epidemic disease that produces such a large death-rate among children and inhabitants of tropical and semitropical countries.

The inference is growing that many of our ill-defined illnesses are due to known or unknown bacillary origin, and can be checked only by a more complete understanding of these important etiological factors.

"ALL DOCTORS LOOK ALIKE TO A STENOGRAPHER"

When one of our medical exchanges fell into the error of making an announcement, in its news columns, concerning an osteöpath, the editor made the profession the amende honorable by the above disreputable parody, which casts a reflection upon every medical man's choice of his most valuable assistant, his office aide-de-camp. THE LANCET has fallen into the same grievous error concerning the ,rubbers, but it will never cast reflection upon its judgment by such an admission as our Cleveland friends made. No, no. The trouble is with the machinery of the news department. It slips a cog once in a while, as all machines do, and we cannot insure our readers against the consequences.

Now, the fact is that our medical directories keep so far behind the times, it is quite impossible always to know when a news items reaches our office whether it is legitimate or illegitimate, and the directories give us little help in our dilemma.

And this gives us an opportunity again to call attention to our news columns, and to ask the aid of our readers in making the department of interest and value. We all like to know where our friends are, and what they are doing; and some of us like to have our friends know where we are, at least some times, and what we are doing. The news columns of THE LANCET, as is well shown in this issue, give a good deal of information, and some of it is of general interest; for instance, almost every issue tells of the class of men coming into the Northwest, of the course these men are pursuing in regard to post-graduate and special work in the medical centers of this country and Europe, and, very interesting indeed, it tells of the great hospital movement that is establishing well-equipped hospitals all over the Northwest. Our city specialists and city hospitals can maintain their out-of-town patronage only by keeping ahead of the work done in the country, and to do this they must increase the pace of the past or even of today, and this, it seems to us, points to increased original work on the part of the specialists, and a decreased mortality-rate on the part of the hospitals. These are high aims, and THE LANCET is doing a good work when it points out by its news announcements the facts that compel the city specialists and the city hospital to press forward to the high mark set for them by the country specialist and country hospital.

The man who graduates at the State University or at Hamline, passes our state examination, spends a year at Johns Hopkins or at some other medical center, and then perhaps another year as interne in a good hospital, is a worthy and a dangerous rival of the best of us; and we may no longer plead "years of experience" against such an equipment. And much less can we do so successfully, in city or country, when this man contracts the habit of going annually to the medical centers for new inspiration; and, as our news columns show, a good many young men are doing just this thing, and they are putting "grey heads on green shoulders," and thus making a combination that is very dangerous to—us.

All doctors don't look alike to those who pay the bills, and make doctors' reputations. The hand-writing is on the wall.

CORRESPONDENCE

A HISTORY OF THE ORGANIZATION OF THE DEPARTMENT OF TUBERCULOSIS IN MINNEAPOLIS

Office of the State Board of Health,
St. Paul, Dec. 23, '03.

EDITOR OF THE LANCET:

The question as to what should be done to relieve the tuberculous poor, and also to instruct the people in general as to the prevention of the spread of the disease, is one which has been under consideration for some time by the citizens of Minneapolis. It was Mrs. Geo. H. Christian, however, who gave the impetus to this work. In the spring of 1903, while talking with Mrs. Christian on other matters, she asked if something could not be done for the tuberculous poor in their homes. My answer was in the affirmative, explaining the various lines that might be followed up. Mrs. Christian expressed a wish that something be done and her willingness to help. Immediately after this conversation I began to consider what could and should be done.

The Young Men's Medical Club had planned to study the disease and its needs, and had appointed a committee consisting of Drs. Ulrich, Day, and White. Through Dr. White the State Board of Health was brought into touch with this committee's work.

During the summer of 1903, Dr. Ulrich discussed with me the advisability of establishing a clinic for the tuberculous poor. There was no question as to the need of such; and the only thing to determine was as to the advisability of establishing an independent clinic or a department in already existing dispensaries. The final concluson was in favor of the latter plan as being the most economical and practical. Thereupon Dr. Frank Todd, chairman of the University of Minnesota Dispensary committee, was appealed to. He took the subject before the Medical Faculty with the result that a department for this work was created in the dispensary, with Drs. Ulrich, Day, Cross, Reese, and Condit in charge of the same, Dr. Ulrich being chosen as chairman of the committee. Provision was thus made for the medical care of the tuberculous poor who are able to go to the dispensary for treatment. It was desirable, however, that the work should not stop with the medical care of these patients, the fact being well recognized that they were spreading infection to others. It was important that a nurse should be provided to visit these patients at their homes to give them instruction as to how they might prevent infecting others, and also as to what was best for themselves in the way of food, fresh air, etc. The duties of such a nurse would include the distribution of pamphlets explaining the nature of tuberculosis and its prevention, instruction in the disinfection of sputum, etc. It would also be a part of her duties to note from time to time whether the preventive measures were being carried out by the patients, and also whether the people were able to secure the proper food for the patient.

At this point the situation was explained to Mrs. Christian. She at once made provision directly and through friends for the expenses of a nurse for one year, and advised me of the fact. The responsibilities of the situation were growing more grave, and the fact was recognized that in order to make a success of this undertaking there must be a responsible organization. It seemed wise to call representative men together to discuss the situation, and this was done Nov. 14, 1903. The subject was carefully gone over, and by vote of those present at this conference a committee on organization to consist of laymen and physicians was appointed. At this stage the suggestion was made by Prof. F. L. McVey that this work might be done to greatest advantage by combining forces with the Associated Charities, the latter organization to look after the relief while the dispensaries were looking after the medical care of these patients. The Associated Charities was requested to submit a proposition to the committee on organization. This it did through a committee consisting of Messrs. F. L. McVey, Geo. A. Brackett, Geo. C. Christian, and F. B. Wells, at a meeting held Nov. 21, 1903. A sub-committee of nine, consisting of Messrs. E. L. Carpenter, F. B. Wells, Geo. C. Christian, and Prof. F. L. McVey, Drs. J. W. Bell, F. F. Wesbrook, P. M. Hall, G. C. Barton, and H. L. Ulrich, was appointed to consider the proposition from the Associated Charities. This the committee did, and reported favorably upon the same to the committee on organization, Dec. 2, 1903. The report of the committee was accepted unchanged. This proposition reads as follows:

ARTICLES OF AGREEMENT

For the Establishment of a Department of Tuberculosis of The Associated Charities

First. The work of the prevention, relief, and care of the tuberculous poor, and the general crusade against tuberculosis, shall be in charge of a special department of the Associated Charities. This department shall be known as the Department of Tuberculosis of The Associated Charities.

Second. This department shall be under the direction of a committee consisting of representatives from medical organizations, societies, and laymen.

Third. The members of such committee shall be divided into three groups, to be known as active, associate, and contributing. The first shall consist of twenty-five persons, thirteen physicians and twelve laymen, at least four of whom shall be members of the board of directors of The Associated Charities.

The Active Committee shall be a permanent one, and vacancies shall be filled by persons nominated by the president of The Associated Charities, and elected by the Active Committee.

The Associate members shall consist of persons contributing $25.00 or more annually to the work of the Department.

The Contributing members, who shall receive all literature issued by the department, shall consist of persons contributing $1.00 or more annually to the work of the Department.

Fourth. The Active Committee shall appoint from its members three sub-committees to be known as managing, financial, and publicity committees. These committees shall have full charge of the work subject to the nominal supervision of the Board of Directors of The Associated Charities.

Fifth. The Associated Charities, without cost to this Department, shall extend the benefits of its organization, employes, records, and information, so long as this service does not entail additional expense to The Associated Charities.

Sixth. It shall be the duty of this Department to conduct a campaign of education relating to tuberculosis as a disease, its prevention, and cure.

Seventh. It shall provide food for the consumptive poor, and take temporary care of families. All relief shall be given under the direction of the manager of The Associated Charities.

Eight. The treatment and prevention of tuberculosis carried on by this department shall always be upon the approval and under the advice of the active medical members of the Department.

Ninth. The treatment of individual cases shall always be under the direction of a physician. The nurses of the Association shall report all data relating to tuberculous cases thought desirable by the medical members of the department.

Tenth. The nursing work of The Associated Charities shall be supplemented by additional workers as the means of the Department will permit, but in case services are given to the general work of The Associated Charities, the nurses of that organization shall render equivalent service. The work of these nurses shall be under the direction of the manager of The Associated Charities, who shall be the executive officer of the Department.

Eleventh. The funds for the conduct of this work shall be raised under the direction of the Department of Tuberculosis.

A committee of three was appointed by resolution to name the members of the first active committee, it being further stated by resolution that the three so appointed should themselves be a part of said committee. Nineteen members have thus far been chosen to serve upon this committee, leaving six yet to be chosen to complete the list. While this general discussion and planning for an organization was going on, the Medical Department of Hamline University had also organized a clinic for the tuberculous poor in connection with its dispensary. The work of the committee on organization has been completed, and this meeting of the nineteen members of the active committee is called in order that the preliminary steps in organizing and outlining its work may be discussed. It is to be hoped that much good will be accomplished in allaying the suffering of the incurable and in preventing the infection of the non-infected. This organization which is thoroughly representative must of necessity be compelled to bear the burden of the missionary work connected with the control of tuberculosis. It will doubtless enter willingly into consultation with and lend its best aid to the city and county authorities when they come, as they soon must, to the consideration of the necessary steps for the care of the tuberculous poor and unfortunates who are brought under their jurisdiction.
area of lung-tissue ripe for the tubercle-bacillus.

H. M. Bracken,
Chairman Committee on Organization.

REPORTS OF SOCIETIES

HENNEPIN COUNTY MEDICAL SOCIETY

F. A. Knights, M. D., Secretary

The Hennepin County Medical Society held a stated meeting in its rooms on December 7th, Dr. J. W. Bell, the president, in the chair, and seventy-five members present.

Applications for membership were received as follows: Dr. E. H. Beckman, of the State Bacteriological Laboratory, U. of M. '00; Dr. O. A. Olson, 1519 E. Franklin Ave., U. of M. '02; Dr. E. K. Green, 228 Plymouth Ave., U. of M., '03; Dr. W. D. Sheldon, 809 Andrus Bldg., Rush, '95; Dr. Wm. M. Chowning, 10 E. 17th St., U. of M. '01; and Dr. Van H. Wilcox, 811 Pillsbury Bldg., U. of M. '01. The same were referred to the Board of Censors. The Censors reported favorably on the application of Dr. J. F. Force, Dr. E. Z. Wanous, Dr. C. N. Spratt, and Dr. Herbert Jones; and upon ballot they were unanimously elected to membership.

Nomination of officers being in order, call was made for nominations for president. Dr. J. H. Dunn nominated Dr. C. H. Hunter for president, and the nomination was seconded by Dr. F. A. Dunsmoor. Dr. W. A. Jones nominated Dr. Frank C. Todd, and the nomination was seconded by Dr. A. W. Abbott. The following nominations followed: For vice-Committee, Drs. Bell, Nippert, J. C. Stewart, president, Dr. W. E. Rochford; for Executive Mann, and Eitel. For librarian, Dr. Geo. D. Head. For trustees, Drs. Kimball, Head, Hill Phillips, Barton, J. H. Stuart, and Chas. Spratt. For Censors, Drs. Hill, Ringnell, Thomas, Chapman, and J. D. Simpson. For delegates to the State Medical Society, Drs. Abbott, Dunsmoor, Phillips, Hoegh, Eitel, and Thomas.

Dr. J. W. Little then read a sketch of the Life of Dr. Samuel D. Gross. Dr. Eitel read a paper entitled "Surgery of the Prostate," which was discussed by Dr. Rochford, Dr. Erdmann, Dr. Nippert, Dr. Dunsmoor, and Dr. Little. The discussion was closed by Dr. Eitel. Dr. Abbott's paper on "Iodized Catgut" was postponed.

At the previous meeting of the society, which was not reported in The Lancet, owing to the absence of the secretary, Dr. H. H. Kimball presented the society $100 to be used for current expenses. A hearty vote of thanks was given Dr. Kimball for his generous gift, which is one of many received from him.—Editor.

BOOK NOTICES

The Treatment of Certain Malignant Growths by Excision of the External Carotids. By Robert H. W. Dawbarn, M.D., Professor of Surgery and Surgical Anatomy in the New York Polyclinic Medical School and Hospital; Visiting Surgeon to the City Hospital, New York, etc. The Samuel D. Gross Prize Essay, 8vo, pages xiii-192. Extra cloth, price $2.00 net, delivered. Philadelphia: F. A. Davis Company.

Dr. Dawbarn, the Philadelphia surgeon, opens hopefully this most hopeless of subjects. An introduction, explaining the method of his six years' work, and that of a few friends, is followed by eight pages sketching the history of ligation of the external carotid for starvation of malignant growths.

Chapter II contains ninety pages of histories giving a detailed account of 83 cases,—the backbone of the essay. These are then tabulated and a résumé given. He concludes that the operation per se "is surprisingly safe."

Chapter IV deals in general considerations. Less radical means are described to secure anemia of inoperable tumors. The plan of the essayist of exterpating first one and, a week later, the other superficial external carotid, tying each branch separately, does not cause a gangrene, as there are 29 points of anastomosis, but does secure a real anemia, as shown by the absence of pulsation in all its branches, thus really starving the growth. The indications are laid down for the operation. It is advised as preliminary to extirpations in the facial region, to control hemorrhage.

Chapter V is occupied with technic.

Chapter VI is anatomical, illustrated by a frontispiece showing 29 points of anastomosis of the branches of the artery in question.

The last 50 pages of the essay are occupied by still another method of obliterating an artery, suggested by Dr. Wyeth. This painstaking and long-continued labor of Dr. Dawbarn is valuable. Such labors can be dispensed with only when the causal cure of malignancy is laid bare.

PROGRESSIVE MEDICINE, Vol. IV, December, 1903. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Octavo, handsomely bound in cloth, 434 pages, 46 illustrations. Lea Brothers & Co., Philadelphia and New York.

There are a few serial publications that become indispensable to every memebr of the profession such publications represent. Probably so strong a word as *indispensable* should not be applied to any work, but certainly Progressive Medicine is a very valuable work, and its high standard makes it well worth the price. The last issue of the year shows it is. Dr. J. C. Hemeneter's article on "Diseases of the Digestive Tract" covers very completely the new physiology of digestion, which is little short of a revolution of medical views on an extremely important subject, which itself covers subjects as widely apart as diseases of infants and diseases of the liver, gall-bladder, and pancreas.

Dr. J. C. Bloodgood, of Johns Hopkins, deals with local and general anesthesia, from the standpoint of the specialist and the general practitioner, and covers the treatment of fractures, dislocations, amputations, and orthopedics. Dr. Belfield writes on genito-urinary diseases: Dr. John Rose Bradford, of University College, London, writes on blood changes in chronic renal diseases and on the surgical treatment of Bright's disease; Dr. Harrington, of Harvard, treats the subject of human and bovine tuberculosis.

The publishers announce a change in price from $10 to $6, the saving being made by using a paper cover and in the cost of postage. We think all such volumes ought to be bound in paper, and the two expensive items of binding and postage thus saved.

NEWS ITEMS

Dr. N. L. Werner has located at Zumbrota.

Dr. F. Moench, of Colorado, has located at Le Sueur Center.

Drs. Parker & Hills, of Warroad, will open a hospital this month.

Dr. H. S. Fairall, of Superior, Wis., has located at Northome.

Dr. J. P. Schutt has moved from Marion, N. D., to McHenry in the same state.

Dr. B. E. Lord, a recent graduate of Hamline, has located at Glenburn, N. D.

Dr. George W. Brooks, who has been associated with Dr. Corry, of Hannah, N. D., has moved to Wales, N. D.

Dr. J. J. Catlin, of Delano, has been appointed assistant surgeon at the Northern Pacific Hospital at Missoula, Montana.

Dr. C. W. Pettit, of Byron, was married last month. Dr. Pettit graduated from the State University with the class of '03.

Dr. L. B. Baldwin has assumed his duties as superintendent of the North Dakota Institution for the Feeble Minded at Jamestown.

Smallpox is becoming quite prevalent in North Dakota, and the question of its diagnosis is again with us, and quarantine measures are ignored.

Dr. George H. Waller, who has been practicing for the past two years at Donnybrook, N. D., has returned to his former home, Rockford, Iowa.

Dr. C. M. Oberg, of Minneapolis, has gone to Chicago and will later go to New York for special work in the eye and ear. He will remain until spring.

Dr. J. C. Burton, of Missoula, Montana, has sold his practice to Dr. A. M. Willard, of Dillon in the same state. Dr. Burton will practice in Los Angeles, Calif.

Drs. Stemsrud and Johnson, of Dawson, have moved into their new hospital. Miss Marie Nelson, a graduate from the Swedish Hospital of Minneapolis is the head nurse.

The Bethesda Hospital Association of Crookston has decided to erect a new building, and the directors have planned to raise $12,000 for the purpose. Dr. H. Holte is the hospital physician.

The Goodhue county newspapers have resolved not to mention the names of members of the county medical society, in retaliation for the position taken by the doctors in the matter of advertising.

Dr. Timothy O'Conner, of Maple Lake, died last month at Denver, Colo., at the age of 54. Dr. O'Conner graduated at the State University in 1891, and soon afterwards began practice at Maple Lake.

The regular semi-annual meeting of the South Dakota State Board of Medical Examiners will be held at the Cataract Hotel, Sioux Falls, on January 13 and 14. An examination of applicants to practice will be given at that meeting.

Civil service examinations for applicants for positions in the medical service in the Philippines will be held on the 27th and 28th inst. at St. Paul, Duluth and Mankato. Information concerning these examinations may be had at the post-offices of the above-named cities.

The Watonwan County Medical Society held its annual meeting in Madelia last month. The following were elected officers for the current year: President, Dr. W. J. McCarthy, Madelia; vice-president, Dr. Flynn; secretary, Dr. D. F. O'Conner, of St. James.

The Minnesota Valley Medical Society elected the following officers for 1904: President, Dr. Ira F. Bishop, of Mapleton; first vice-president, Dr. L. A. Fritsche, of New Ulm; secretary, Dr. E. D. Steele, of Mankato; treasurer, Dr. G. F. Merritt, of St. Peter.

Dr. George D. Head has returned to Minneapolis after an extended trip in Europe. He spent eight months in Vienna, during which time he sent THE LANCET several of the most interesting and valuable letters we have ever published. Dr. Head will hereafter confine his work to consultation and office practice in internal medicine.

At the 18th annual meeting of the St. Louis County (Duluth) Medical Society, held last month, the following officers were elected: President, Dr. C. F. McComb; 1st vice-president, Dr. M. K. Knauff; 2d vice-president, Dr. F. C. Drenning; secretary, Dr. F. J. Patton; treasurer, Dr. C. E. Lum; delegate, Dr. W. H. Magie; censors, Drs. A. C. Taylor, J. M. Robinson, and W. R. Bagley.

The Seventh District Medical Society of South Dakota, which was organized in October, held its first regular annual session last month, and elected the following officers for 1904: President, Dr. Stephen Olney; vice-president, Dr. A. H. Tufts; secretary, Dr. John R. Hawkins; treasurer, Dr. Cora Carpenter. All these officers reside in Sioux Falls. The society will meet monthly in Sioux Falls.

The new and commodious building of the Dickinson (N. D.) Hospital was opened last month. The building cost $20,000, and is a well-equipped, modern hospital structure. It is conducted by Dr. Lester C. Smith and his wife, Dr. Sarah E. The former is a graduate of Rush, '83, and the latter of the Woman's Medical College of Philadelphia, '01. We believe there is not another new state in the Union that has a class of medical men and women equal to those in North Dakota, and the success attained by almost all of them testifies that the state appreciates their talents.

WANTED

A physician with some experience, and lots of energy. A good opening for the right man. Best location in a city of 7,500. Address H, care of THE LANCET.

INTEREST IN HOSPITAL FOR SALE

Being obliged to go to a milder climate, I wish to sell my business. The hospital is located in a N. D. village of 1,000 inhabitants, with a large contributary territory and two railroads. Myself and partner are the only physicians in the village, and we have the railroad, county, and village work. The hospital has 20 beds, and cost $16,000. I own $3,000 of the stock and one-half interest in the furniture and fixtures. I offer all this with by 5-room house which is steam-heated, and has hot and cold water, bath, etc., for actual cost, or about $8,000. The practice of the firm and hospital business amount to $20,000. The purchaser must be a surgeon of some experience. Address S, care of LANCET.

A thoroughly reliable Minneapolis physician has investigated the above offer, and says the opening is a very unusual one, and THE LANCET concurs in this view. As the owner is willing to retain his residence as an investment, the value of the same will be deducted from the purchase price.

NORTHWESTERN LANCET

A Semimonthly Medical Journal

VOL. XXIV JANUARY 15, 1904 No. 2

FRACTURES OF THE LOWER JAW*

BY ARTHUR T. MANN, M. D.

Instructor in Clinical Surgery, University of Minnesota

MINNEAPOLIS

The symptoms of fractures of the lower jaw are so evident that fractures here have been recognized from the earliest times. The principal methods of treatment have long since become fixed, and little of importance has been added for years. For this reason the writer will not attempt to give an exhaustive study of the literature of the subject, but, rather, will present, briefly, some of the main facts which appeal to him. Under the head of treatment a method of tying the teeth of the lower jaw to the teeth of the upper jaw will be given which the writer thinks is original. The basis for the practical side of this paper is a personal study of eleven cases of fracture of the lower jaw.

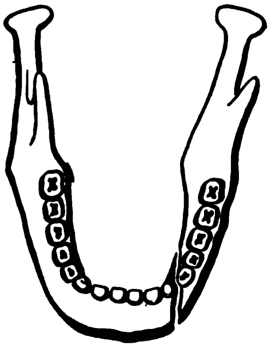
The jaw-bone is so accessible to examination that fractures seldom present difficulties in diagnosis, except, perhaps, fractures of the condyloid or of the coronoid processes. These sometimes may be difficult to determine. A finger thrust high up on the inside and another in a corresponding position on the outside will often render diagnosis easy, but the fingers cannot always be inserted without anesthesia, because of muscular spasm. The jaw may be grasped between the two hands with one or two fingers lying over the suspected fracture, and manipulation from side to side and backward and forward may disclose its presence.

As to the symptoms of fracture of the jaw, the patient's position is peculiar. He will sit supporting his jaw with his hand, especially upon making any attempt to speak or to swallow. The saliva is increased, and will dribble from his mouth because of the pain it would cause to swallow. There will be bleeding and laceration of the gums, and mobility in the continuity of the bone; and as a rule there will be deformity. The pain and tenderness is usually very severe, much more than in most other fractures. This is no doubt largely due to the laceration of the soft parts, but it may also be increased by some lesion of the inferior dental nerve or its branches. That more severe complications do not often follow because of injuries to this nerve in these fractures is certainly remarkable. It is hard to believe that in a complete fracture with considerable displacement, complete rupture does not take place. It would seem that scar-tissue at the site of a laceration or a rupture would be a fruitful source of pain after healing, but this does not often occur, nor do we have the loss of sensation in the lower lip and chin which should follow injuries to this nerve. Fracture generally occurs anterior to the mental foramen and therefore, the main nerve trunk is not often injured, and yet it is a matter of general observation that fractures farther back on the body of the jaw do equally as well.

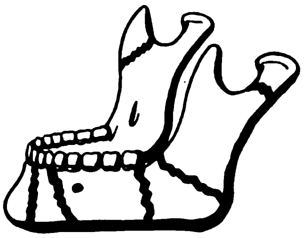
As to the site of fractures: The body is much more often broken than the ramus; for it is more exposed to injury, and, on the other hand, the ramus is protected by thick muscles. Fractures of the body may occur at any point. Near the canine tooth and upon one or the other side of

---

*Thesis read before the Minnesota Academy of Medicine, October 7, 1903.



1.



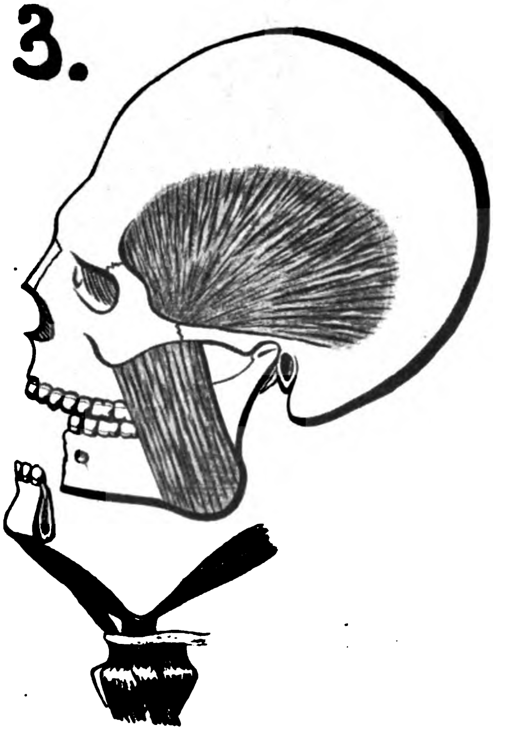
2.

the symphysis are the most common sites. The sockets of the teeth, especially of the canine, sometimes seem to weaken the jaw, as does also atrophy of the jaw at the site of lost teeth. The mental foramen sometimes determines the position of a fracture. Fracture directly at the symphysis seldom occurs. Fracture of the ramus is most frequent near the angle of the jaw. Fracture of the neck of the condyle is not common, and fracture of the coronoid process is rare, and is usually the result of extreme violence.

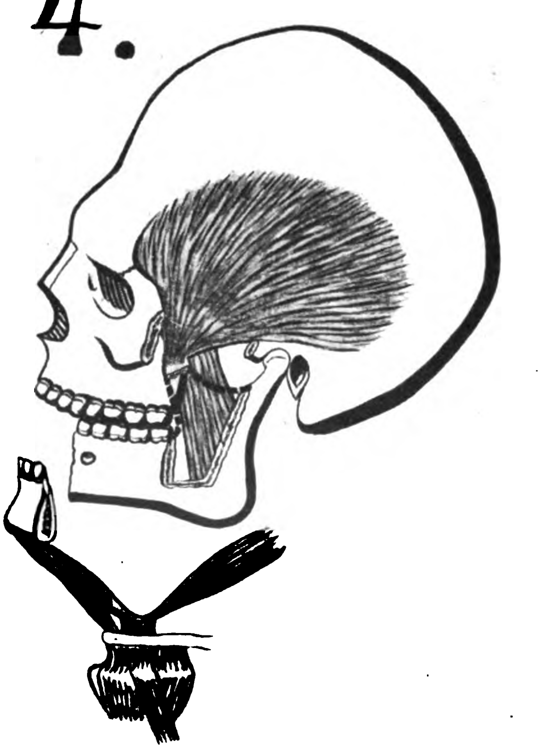
As to direction: Fractures through the anterior portion of the body of the jaw are usually transverse. On the sides of the body they are usually oblique anteroposteriorily, so that the posterior fragment tends to over-ride the anterior. Multiple fractures are not uncommon, and they often produce marked deformity. Usually the fracture is through the body on one side and through the ramus at or near the angle on the other, though both may be on the same side of the symphysis. The writer has had one of each class.

The whole subject of displacement is interesting, and depends largely on the mechanism of the muscles which are attached to the jaw. The displacement can readily be made out by examining the line of the teeth when the fracture is in front of the anterior border of the masseter

3.



4.



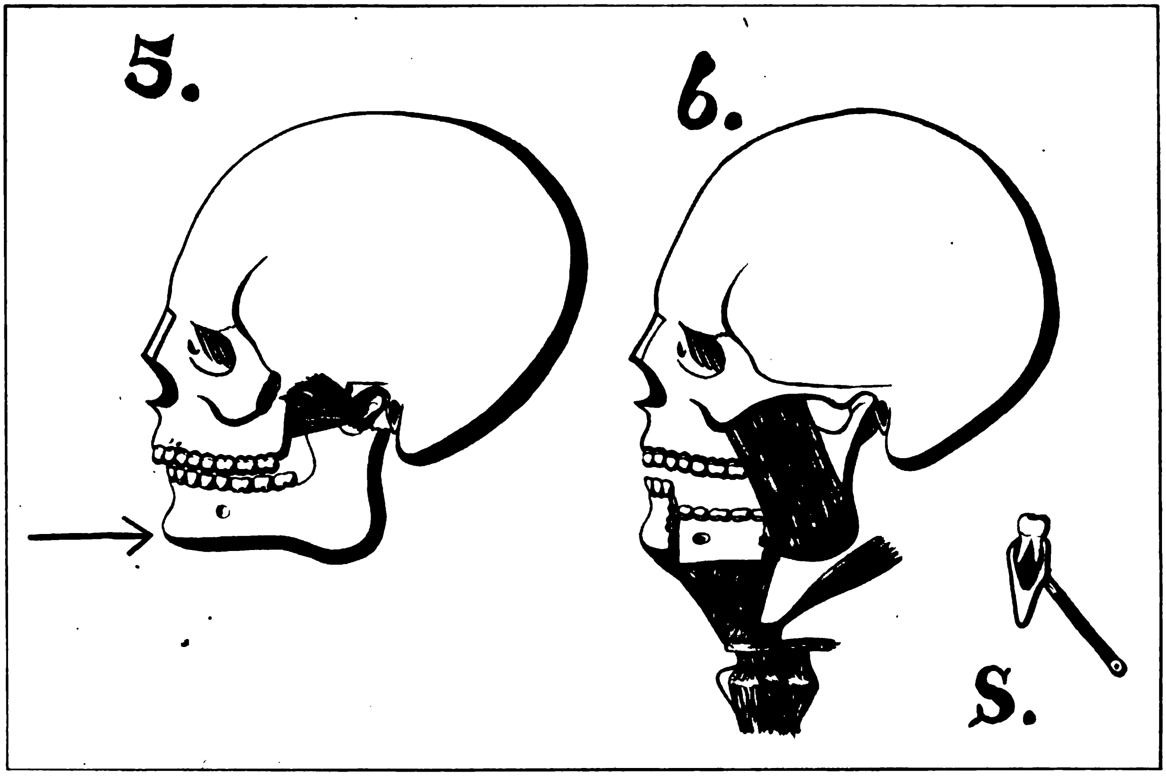
muscle. In these cases the displacement of the anterior fragment is downwards and a little backwards, owing to the action of the muscles passing from the chin to the hyoid bone: the digastric, the geniohyoid, the anterior fibers of the geniohyoglossus, and possibly the mylohyoid, as shown in part by Figs. 3 and 4. The posterior fragment is held close against the upper jaw by the temporal, the masseter, and the internal pterygoid. This fragment also has some tendency to outward displacement because of the obliquity which sometimes occurs in the line of the fracture, aided, possibly, by the action of the temporal and the masseter muscles upward, forward, and a little outward. In the rare cases in which the obliquity of the fracture is reversed the displacement would be inwards. With a double fracture anterior to the masseter, i. e., on either side of the symphysis, the displacement is often extreme. The middle portion may be drawn down until the teeth are on a level with the lower margin of the other fragments of the jaw. If one point of fracture is in the ramus or beneath the masseter, and the other near the symphysis, the fragment will be tilted down in front and up behind, down by the muscles from chin to hyoid and up by the masseter and internal pterygoid.

When a single fracture is in the angle of the jaw or in the ramus, very little displacement takes place, as a rule, because usually the masseter and the internal pterygoid remain attached to both fragments, and hold them in place. Sometimes the force which produced the fracture causes some tearing of the muscle attachments and some displacement, but more often backward pressure on the point of the chin from improper bandages and appliances used in the treatment of the fracture, causes such displacement, which then results in healing with deformity. Fracture close to the symphysis has little tendency to displacement, as the muscles act equally upon both fragments and tend rather to hold them together. The mylohyoid would do this directly; the digastric, the geniohyoid, and the anterior fibres of the geniohyoglossus tend also to do this, pulling backward as they do near the median line against the opposition of the external pterygoid at the neck of the condyle, and against the articulation itself, both of which are situated farther from the median line.

In fracture of the neck of the condyle, the displacement is often considerable. The condyle is pulled strongly forward and inward by the external pterygoid, and the whole of the rest of the bone swings over toward the affected side, drawn by the action of the external pterygoid of the opposite side, now unopposed (Fig. 5). This would be a point in differential diagnosis when dislocation of the jaw is suspected, the displacement of which would be forward. Fracture of the coronoid process is rare; probably its usual displacement is slight. If it is completely severed from the jaw, it is drawn upward by the action of the temporal muscle. In a double fracture on the same side, with the posterior fracture anterior to the masseter muscle, the middle portion would be tilted inward and drawn downward by the mylohyoid muscle (Fig. 6).

The cause of fracture of the lower jaw is usually evident, and most commonly it is direct violence, such as a blow from a fist, a kick from a horse, or a fall from a bicycle. The fracture may occur from indirect violence; as, when compressed between two bales of hay it snaps near the symphysis. The neck of the condyle may be fractured by direct violence, as by a hard blow on the side of the face, or more commonly by indirect violence, as in the writer's case, by a fall on the chin. Fracture of the ramus near the angle seems to be produced always by direct violence. The coronoid process is seldom broken, and then apparently only by a violent blow on the side of the face or by a gunshot wound, though it is possible that it might occur by violent action of the temporal muscle. The jaw-bone would probably be more often broken than it is were it not for its loose-sliding articulations, which yield to force; for its shape in the form of an arch, which makes it strong; and for the density of its structure.

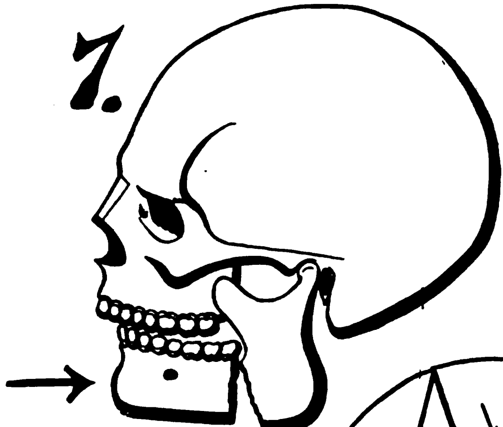
In dealing with fractures of the jaw we can remember that while nearly every fracture is compound because the periosteum and mucous membrane are torn through into the mouth, yet they nearly always unite like simple fractures. If a tooth is loosened it should not be removed if it is in place or can be forced into place, unless it interferes with accurate apposition of the fracture. The writer has had a tooth grow fast after it had remained loose in a fractured jaw for six weeks. Hemorrhage from the inferior dental artery is rare, but it may occur and it may be profuse. Considerable inflammation usually follows fracture of the jaw with a brawny infiltration of the face and neck. This is more marked when associated with necrosis of splintered portions of bone and with septic infiltrations. These sometimes cause abscesses and sinuses in the region of the jaw which are hard to manage. An occasional salivary fistula from a lacerated submaxillary gland may cause considerable annoyance.



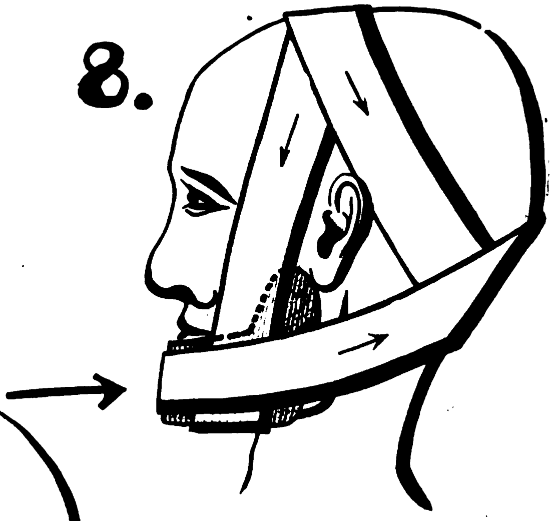
The treatment of fractures of the jaw by the surgeon usually has been unsatisfactory. For this reason a large number of methods have been devised, and many splints and appliances used; and still many of the results are not good. It is extremely difficult to hold the fragments in good apposition, and to avoid faulty union in some of our cases. We have had to call in the dental surgeon to help us out, and some of his results are not good.

In simple fractures in the body of the jaw it is usually fairly easy to get a good alignment by proper manipulation, but it is not usually easy to maintain it with accuracy. Chin-splints have been made of various materials, such as gutta-percha, mill-board, plaster of Paris, tin, and other materials. They are, as a rule, inefficient; they delude us into the belief that we are accomplishing something. The only cases in which they can be of service are in those in which the fracture is in the anterior portion of the jaw. If there is more than a slight tendency to displacement the use of the splint will not keep the alignment good. The bandages and head-pieces in use are most of them modeled on the Barton head-bandage (Fig. 8). The four-tailed bandage, the head-cap with elastic bands pulling up and back, and the moulded leather chin-piece with straps pulling up and back, are some of those in common use. The upward pull is desirable. It pulls the lower jaw up against the upper jaw as a splint, and it is the best splint there is, for the lower jaw must fit it or there will be union in malposition. The backward pull is vicious when the line of fracture is not near the symphysis, because it tends to draw the longer fragment backward upon the shorter one, and to produce an angular deformity at the point of fracture (Fig. 7). This is more true the farther back the fracture lies. For this reason the modified head-bandage shown in Fig. 9 is to be preferred. The horizontal turn of the bandage is thrown across the forehead where it does no good, but where it certainly does no harm.

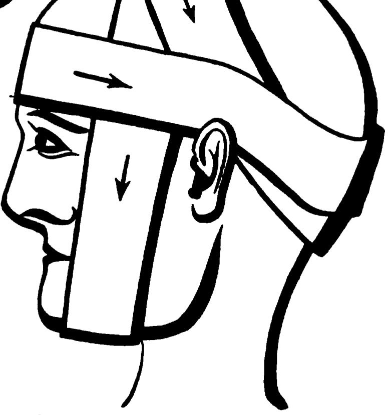
7.



8.

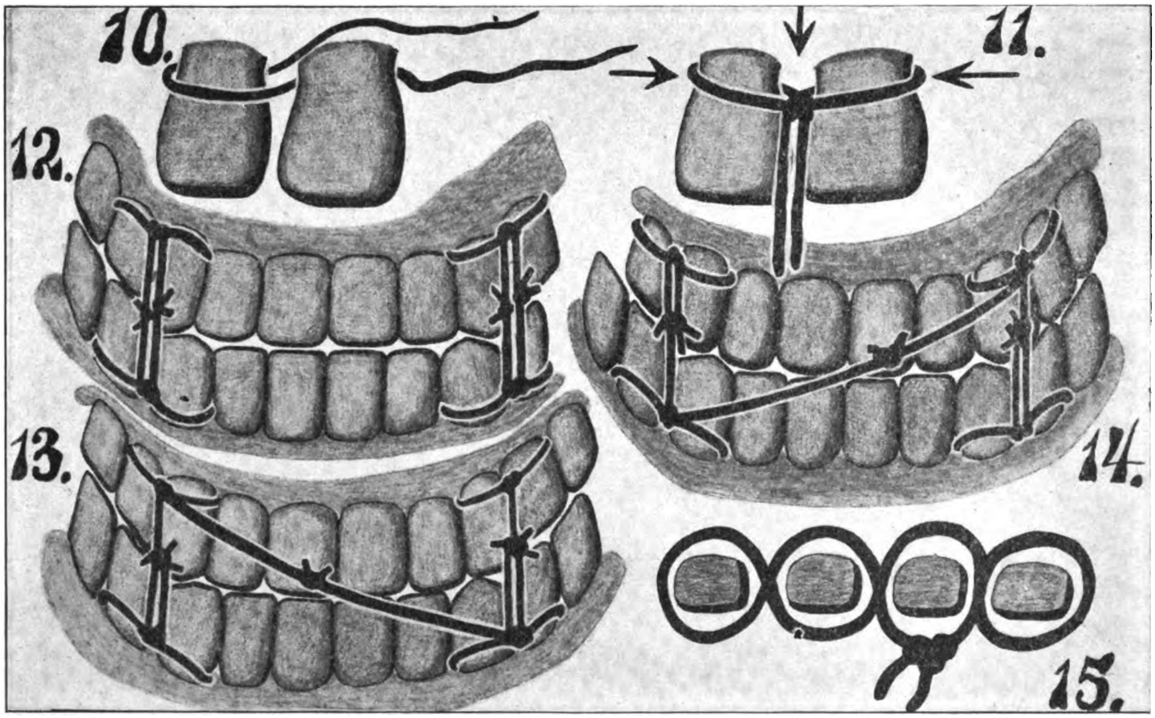


9.



Wiring together the two teeth that are contiguous to the fracture loosens the teeth, and is not a wise procedure. However, if one includes four teeth, two on either side, it will be found of much service. Instead of silver wire, which is stiff and brittle, common ligature material will be found more serviceable, such as silkworm-gut, silk, or even common cotton thread if doubled. The material should be threaded on a needle, and passed between the teeth as a continued figure-of-eight (Fig. 15). When this is drawn tight while the jaw is molded into place, the edges of the fracture will be drawn into close apposition, and the nearest teeth, which may be loose, will be steadied in their place by the figure-of-eight turn about them. The modified head-bandage may now be applied, and in many simple cases, if the ligation of the teeth is carefully and firmly done, the result will be union with good alignment. If the ligature is once well applied it will usually stay firmly in place until union is complete. A chin-splint may be used also, but it is cumbersome, and as a rule unnecessary. Saliva often drools into its padding, decomposes, and early becomes penetratingly offensive. This demands frequent change, and tends to stir the fracture up an unnecessary number of times. In some of the less complicated multiple fractures of the jaw also, the above methods will suffice; but as a rule other procedures are demanded for this class of fractures, as well as for many of the less tractable of the single fractures. Of these we have the following plans: (1) ligation of the teeth of the lower jaw to the teeth of the upper jaw; (2) wiring the fragments together; (3) some form of interdental splint with or without an external appliance.

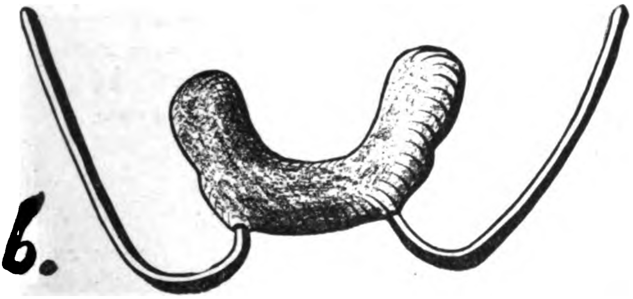
The idea of tying the teeth of the lower jaw to the teeth of the upper jaw first occurred to the writer in 1895. He had been laboring for a week, without success, for good position in an obstinate double fracture of the jaw, the fifth of his series, and it had been about decided to send the case to the dental school for some form of interdental splint. Then another patient, the sixth of his series, returned from a drunken brawl with a refracture of the jaw on the same day he had been discharged from treatment at the hospital for a similar lesion. Ordinary methods did not seem to promise much, and, after a little thinking, the idea of tying the lower to the upper teeth presented itself. This was done in both of the cases, and with three subsequent ones, with excellent alignment in all of them. One of these, with fracture near the angle of the jaw, was not seen until the third day after fracture; and one, near the second incisor, had been treated for a week by Barton's head-bandage, with separation of the teeth, one of which was loose, and with lack of alignment; and the last one, near the second incisor, showed a marked tendency to displacement, but would have done as well probably with the continued figure-of-eight about the two teeth on either side of the fracture, supplemented by a proper head-bandage.



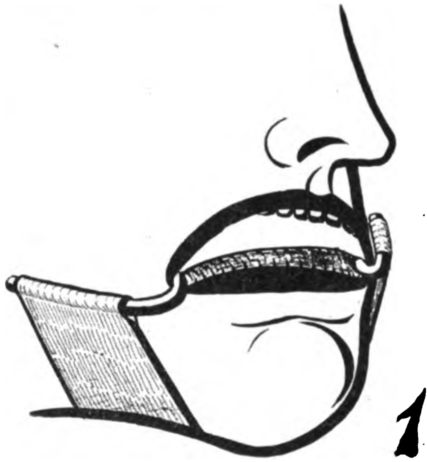
THE METHOD

Before proceeding, the continued figure-of-eight, spoken of above, should be used to draw the fractured ends of the jaw together when the fracture occurs between teeth which are available for the purpose, otherwise this must necessarily be omitted. Teeth should now be selected for the special ligatures. At two convenient places two suitable teeth should be selected on the upper jaw which are fairly well opposed to two suitable teeth on the lower jaw. If the fracture is fairly well forward, one pair of teeth should be taken on one side of the fracture and one on the other side. If the fracture is farther back both pairs may be taken on the same side of the fracture. The ligature material on a needle may be carried backward between two of the teeth selected, well toward the jaw line, and often through some of the soft tissues, back around one of the teeth, in again between the teeth and back about the other one. This should be done so that the loose end between the teeth lies deeper than the main portion of the ligature (Fig. 10), and so that the ends will tie above it, and pull it down when the ends are pulled down. This will serve to bind the suture tighter to the teeth when the ends are under tension (Fig. 11). In a similar way a ligature should be tied about each two teeth selected. This will give two places with two loose ends above and two below.

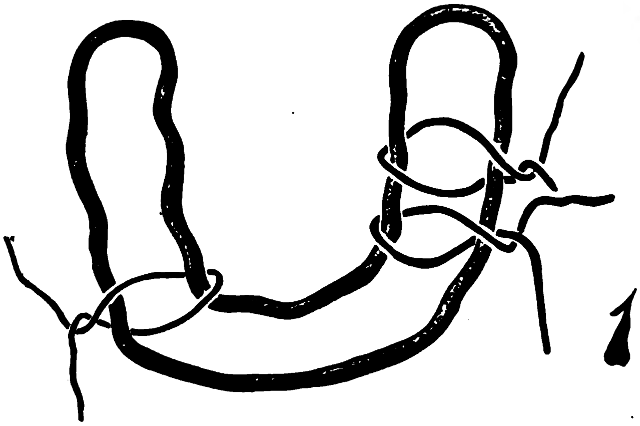
If there is no tendency to lateral displacement of the fractured jaw, the two ends above may be tied to the two ends below, separately or together, but so as to hold the lower jaw well up against the upper jaw (Fig. 12). If there is a tendency toward lateral displacement, one may be left untied above and one end on the opposite side below. These ends may now be drawn together diagonally across the front of the teeth, and tied so as to correct the displacement (Figs. 13 and 14). The ends from right to left are used if the displacement is toward the left, and *vice versa*. The modified head-bandage is now applied to remind the patient that he is not to jerk his mouth open against the ligatures. If the ligatures are placed with care they will usually stay in place for a long time.



16.



17.



18.

The above method of treatment is of peculiar advantage in some cases usually difficult to treat. In one fracture just back of the last molar it seemed impossible to gain fixation by the usual means, but tying the teeth of the lower jaw to the teeth of the upper jaw easily drew the jaw forward into place and held it there. The periosteum and the anterior attachment of the masseter muscle held the fragments together. In a similar way a fracture through the ramus with some angular deformity may be drawn into place and fixed; or a jaw swung over toward a fractured condyloid process may be drawn forward into place and held there. There is no difficulty about the feeding. A patient can take liquids, semisolids, soft-boiled eggs, and the like, by suction around behind the back teeth; and he can keep his mouth clean and comfortable by rinsing it with a suitable mouth-wash.

There will always be cases difficult to treat by any method. With comminuted or multiple fractures where the displacement is considerable, where reduction is difficult, and where there is constant danger of displacement, it often seems best to wire the fragments. For work on the ramus it is necessary to go through the tissues on the outside, but the body of the jaw can usually be wired from the inside. The drill holes may be placed between the tooth-sockets, or low down in the jaw to avoid the inferior dental nerve. Occasionally it may be best to wire in both places for the sake of stability, or to wire obliquely to draw a fragment into place. A silver-plated copper wire will stand more hard usage without breaking than silver wire. As a rule everything should be saved which has a sufficient blood supply.

INTERDENTAL SPLINTS: These have been long and skillfully used by some of the dental surgeons. It may be well to give a brief word in regard to them, to round out the subject of this paper. An impression of the fractured jaw is taken, and a model made. The model is sawed into pieces, and the fragments are placed in good alignment. The splints are carefully molded to fit the model. As a rule they are of no service when the fracture is at the angle of the jaw, in the ramus or in the condyloid process.

The Hammond wire-splint is shown in Fig. 18. It is made of strong wire and accurately fits the teeth. The fractured jaw is forced into it, and it is bound on by fine wire about any number of individual teeth. Dr. Angle has made bands to fasten on to individual teeth, and screws or wires are used to bind them together. Interdental splints to fit the teeth have been made of various materials,—gutta-percha, vulcanitis, and the different metals.

There is another class, large in number, of which the Kingsley splint (Figs. 16 and 17) is an example. These have outside attachments for the support of the jaw. The Kingsley splint consists of a cap to fit the teeth, and to this are attached two strong wire arms which come out of the mouth and run back along the cheeks. The cap is cemented to the teeth, and a stout rubber-webbing stretches under the chin from one wire arm to the other to hold the jaw up against the cap or interdental splint. Many variations of the external portion are made, some of them with screws and ratchets to control the compression. Compression of the soft parts by a rigid outside piece often causes considerable discomfort to the patient, and sometimes causes sloughing beneath the rough edge of a fracture.

IN CONCLUSION: For fractures of the lower jaw we have, first, the continued figure-of-eight ligation of the teeth on either side of the fracture, together with the modified head-bandage. This will give good results in many simple cases in which the fracture is in the alveolar portion of the jaw. The chin-splint may be of value in some cases, but as a rule it is superfluous. We have, next, the method of tying the teeth of the lower jaw to the teeth of the upper jaw, with or without the continued figure-of-eight ligation. This will prove of service in some of the more difficult cases, not only those with anterior fractures, in which displacement tends to recur, but in those with fracture back of the teeth, at the angle, in the ramus or in the condyloid process, fractures which are sometimes most difficult to manage well by any other method of treatment.

We have, also, the operation of wiring the fragments together, which has a definite place. Its employment must be determined by the surgeon himself in each individual case.

And, lastly, the interdental splints are of service in selected cases.

CASES

Case 1. Fracture near left canine; cause, blow from a fist; some displacement, tooth a little loose; treatment, chin-splint and bandage; healed with moderate displacement.

Case 2. Fracture near second left incisor; cause, blow from a fist; some displacement; treatment, chin-splint and bandage; moderate displacement when healed.

Case 3. Fracture near middle of left incisor with displacement; cause, blow from a fist; treatment, head-bandage and guttapercha chin-splint; result, moderate loss of alignment of the teeth.

Case 4. Fracture near left canine; cause, drunken brawl; considerable displacement; treatment, interdental splint with rubber webbing beneath chin, and attached to the wire arms of the interdental splint; result, fairly good, moderate displacement.

Case 5. Fracture at posterior root of last right molar, obliquely downward and slightly backward, with a second fracture near the left canine; cause, drunken brawl; considerable displacement, difficult to manage with bandage, and with bandage and chin-splint; finally, the teeth of the lower were tied to the teeth of the upper jaw together with the continued figure-of-eight about the teeth continguous to the anterior fracture, and head-bandage used; result, good, apparently an exact alignment of the teeth.

Case 6. Fracture near median side of left second incisor with both contiguous teeth loosened, with a refracture the tenth day of the healing of a previous break; cause, drunken brawl; treatment, continued figure-of-eight on lower teeth, and the tying of lower teeth to teeth of the upper jaw, together with a head-bandage; result, good, apparently an exact alignment of the teeth.

Case 7. Fracture between second and third molars, down and slightly back; cause, blow on the left side of the chin with a fist; moderate angular deformity; treatment, third day tied teeth of lower to teeth of upper jaw without the continued figure-of-eight; head-bandage; posterior fragment was drawn forward into place by adherent periosteum and soft parts; result, good, apparently a straight alignment of the teeth with a scarcely noticeable spreading at the point of the callus.

Case 8. A double fracture, one on the left side near the canine tooth, one between the first and second molar of the same side; cause, struck by a swinging bale of hay; lost first bicuspid; displacement inward and downward with the teeth rotated a little inward; fragments wired; result, fairly good, slight loss of alignment.

Case 9. Fracture near left second incisor with considerable displacement; cause, blow from a fist; treatment, one week with head-bandages with poor alignment, then was called in consultation and tied teeth of lower to teeth of upper jaw, and used the continued figure-of-eight and head-bandage; result, alignment of teeth exact, with a very slight spreading at point of fracture.

Case 10. Fracture at neck of left condyle; consultation case; cause, fall from bicycle onto point of chin; some displacement of jaw toward side of injury; treatment, jaw drawn forward and held against upper teeth with head-bandage, which proved sufficient; result, no apparent deformity, and patient thinks the jaw to be as good as ever.

Case 11. Fracture near left second incisor with the tooth loose and moderate displacement; cause, blow from a fist; treatment, continued figure-of-eight, together with tying teeth of lower to teeth of upper jaw and a head-bandage; the tooth remained loose until after the sixth week, but finally became firm; result, good, alignment of teeth exact, no apparent spreading at point of fracture.

THE HOSPITAL BULLETIN

ST. BARNABAS' REPORTS

MINNEAPOLIS

As explained in our editorial columns, The Hospital Bulletin is open to all, and every hospital and physician is cordially solicited to contribute reports of cases. Due credit will be given both to the individual, and to the hospital when cases are hospital cases.—Editor of The Lancet.

THE METHOD OF CASE-RECORDING AT ST. BARNABAS HOSPITAL

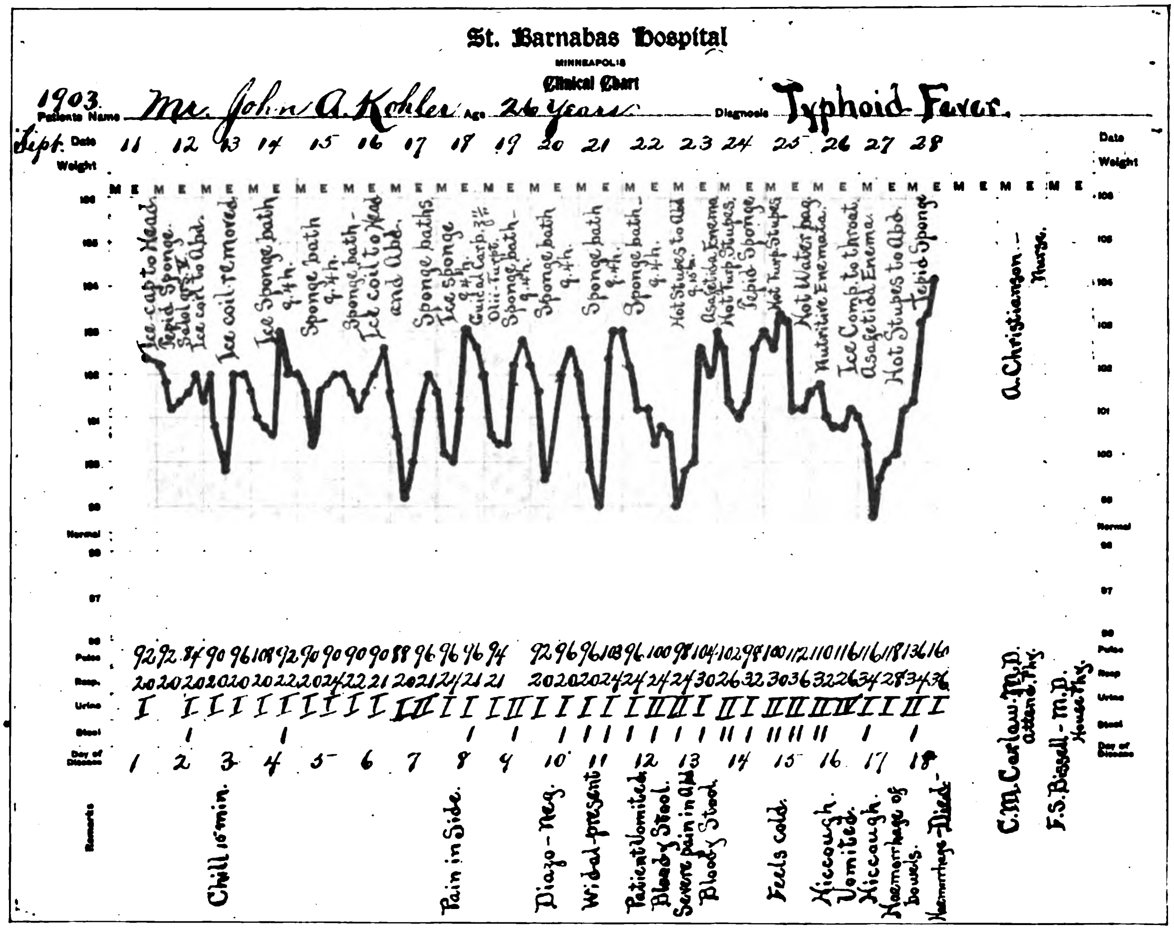
That all medical and surgical cases which enter a hospital should be carefully recorded and kept in the hospital archives for future reference, is a recognized fact. It is for the hospital to decide upon a routine procedure which will entail a minimum amount of effort upon the part of nurse and physician, and which will at the same time give a thorough and detailed account of the case, its history, the treatment from day to day, and the results, so that at any moment the physician may have a complete schematic picture of what has been going on up to that time, and which, upon the dismissal of the patient from the hospital, will be a complete report ready to be catalogued, and put aside for future reference.

The chart on the next page gives such a record of a medical case showing the method adopted at the St. Barnabas Hospital of this city.

Photograph of history files and card catalogues kept in the hospital office.

The entire chart is enclosed within a cover upon which are the the patient's and physician's names, the date, address, age, references, etc., such information, in short, as is always obtained in the office of every hospital.

The report proper begins with one or more pages devoted to the history of the patient. The intention is to have this uniform and complete, and to insure such a result a short scheme based upon the accepted method of history-taking is printed in the upper right hand corner for the guidance of the interne.



History Sheet showing the method of summarizing on one page the course of the disease and treatment.

Following the history comes the temperature curve. Upon this sheet is also indicated the pulse-rates, respirations, and evacuations (see the chart), as well as treatment prescribed and remarks as to progress of case. Next come two pages contributed by the pathological laboratory. The first is devoted to the routine examination of urine and blood, the second to the special daily examinations made when indicated by the disease. Then follows a page on which is found a summing up of the treatment during the entire course of the disease, including diet, baths, etc.

We now have in some half dozen pages a complete summary of the case from the time of its entrance into the hospital to its dismissal, as well as its history, all in fact that is necessary for a satisfactory review. This is summarized mainly by the nurses from the daily bedside notes. These are appended to the above-described pages, and complete the chart. At the end of every twenty-four hours a summary of the day is added in red ink showing the highest pulse-rate, respiration, and temperature reached, as well as the medicines given, the diet, and any additional remarks, such as those bearing upon changes which may have taken place.

The chart is now ready to be catalogued, and is laid aside with similar charts in drawers which are alphabetically labeled, and where it can be readily found again by means of a card catalogue according to the most approved library system. The whole is placed in the office at the disposal of the staff at all times.

This system has been in use at the hospital only a comparatively short time, but it has been very successful. It is evident, however, that, to bring about ideal results, the co-operation of all attending physicians will be necessary, so that no link in the chain of the case's progress may be lost.

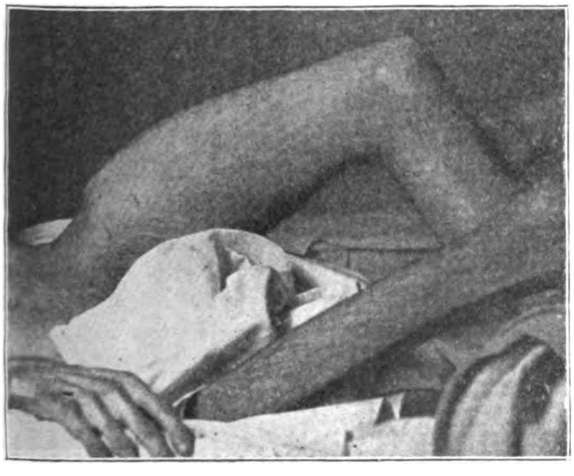
A careful physical examination at time of entrance should be made by the attending physician in every instance, and a daily note as to the condition of the patient dictated by him, and added to the history sheet. This point cannot be too strongly emphasized, as it is only in this way that the charts can be of any real value; and it is earnestly hoped that in the future more careful attention to these details will be given.

PATHOLOGICAL FRACTURE OF THE FEMUR

SERVICE OF DR. W. E. ROCHFORD

Alford W——, aged 28, white, entered St. Barnabas Hospital April 26, 1903, and again Nov. 9, 1903. He was born in England, and came to the United States when six years of age; occupation, farm hand.

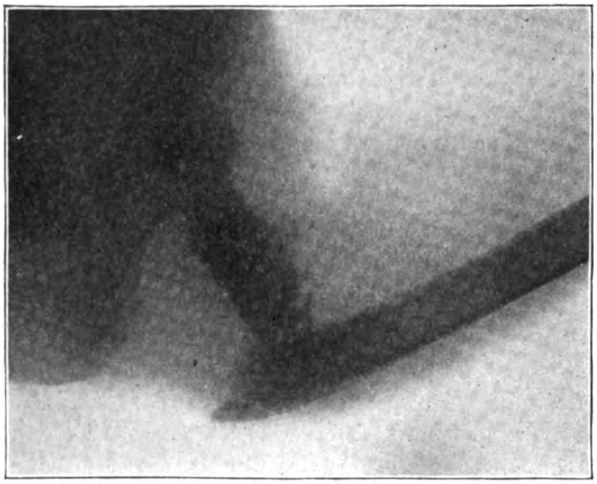
FAMILY HISTORY.—Unimportant; no history of tumor.



Sarcoma of the Thigh.

PERSONAL HISTORY.—He was not a healthy child. Had had rheumatic pains for several years.

PRESENT ILLNESS.—In October, 1902, he was troubled with pain in left thigh, and began to walk with a limp. Worked at intervals until February, 1903. While working on a farm his leg suddenly gave way, and he fell to the floor. His leg became at once useless, but he was not troubled with much pain. He remained in bed until he was taken to St. Barnabas Hospital the following April. He exhibited the ordinary signs of fracture a little below the neck. Diagnosis was made of pathological fracture, probably sarcomatous. An unfavorable prognosis was given, and he returned home where he remained in bed without symptoms of metastatic involvement. He returned to the hospital the following November.



X-Ray photograph of pathological fracture, taken by Dr. C. P. Spring. Note the erosion and rounded edges of the fragments.

PHYSICAL EXAMINATION.—Patient extremely emaciated; does not seem very bright; urine and feces involuntarily passed, occasionally followed by retention of urine, which is purulent in character. A large bed-sore about five inches in diameter, extends over the sacrolumbar region. Left thigh very much enlarged. It is immovable. The knee is flexed, and the leg inwardly rotated. Morning temperature usually abnormal. Evening temperature 100°. Pulse ranges from 96 to 120.

Patient died Dec. 20, 1903.

POST-MORTEM FINDINGS

BY S. MARX WHITE, M. D., PATHOLOGIST

AUTOPSY DIAGNOSIS.—1. Periosteal sarcoma of upper third of left femur, with pathological fracture below great trochanter. 2. Edema of left leg and thigh. 3. Softening of a small focus in left cuneiform bone, with healed sinus (changes resemble those seen in rheumatoid arthritis). 4.

Decubitus over sacrum, about five inches in diameter, burrowing up over left sacro-iliac synchondrosis to region of left psoas muscle, and extending into peritoneum. 5. Diffuse seropurulent peritonitis. 6. Septic cystitis and pyelitis with formation of small concretions and pyelonephritis. 7. Brown atrophy of heart. 8. Atrophy (marasmatic) of liver.

Description of Left Thigh.—The left thigh rotated outward, and there is a false joint in the femur, and about 3 inches below the acetabulum there are 4 hard nodular protuberances connected with bone. Thigh enlarged at this point. Examination of enlargement shows a fusifrom growth on femur extending from about 6 inches above knee to head of femur which is in the acetabulum. Growth is about 5 inches in diameter and 8 inches in length from above downward. It is firm, smooth, shiny on cut surface, and has a dense capsule. The femur is fractured about 2 inches below the great trochanter, but is little infiltrated, the new growth surrounding the bone, and leaving it somewhat roughened when the growth is removed from the surface. Above and below the point of fracture, however, the bone has undergone more absorption than at any other place, the surface being considerably eroded, and the fragments tapering toward the fractured ends which are rounded and quite rough. The ends are nearly in apposition approaching each other at an angle of about 60°, and between the ends is a soft hemorrhagic substance, this condition of the tissue being due apparently to the traumatism from movements of the fractured bone.

Microscopic Examination.—Sections taken from peripheral portion of the tumor, including the fibrous capsule. The tissue consists for the most part of round cells, varying considerably in size, averaging about 10 microns in diameter, and loosely grouped in small alveoli. The stroma consists of rather thick bands of fibrous tissue, hyaline in places. In places a very delicate reticulum is present in the alveoli. An occasional small thin-walled vessel is seen. The capsule is thick, and consists of dense fibrous tissue, infiltrated in places by the cellular new growth.

Diagnosis,—Round-celled alveolar sarcoma.

TREATMENT OF VARICOSE VEINS

Service of Dr. K. Hoegh

There are two clinical varieties of varicose veins: in the one the vein walls are so atrophied that the valves have become insufficient; in the other they are yet physiologically active. It is mainly the valves of the great saphenous vein that concern us. If these are insufficient the blood-current in that vein runs downward when the patient is in the upright position. The blood column reaches from the vena cava, through the iliac and femoral veins, and we have actually in the saphenous vein a current that runs in a centrifugal, instead of a centripetal, direction. This abnormal current is easily demonstrated by either of these two experiments. The patient is placed horizontally, and the leg is emptied by holding it vertically for a few minutes; when the subcutaneous veins have collapsed, the patient is made to assume a half-sitting posture; the moment the great veins are higher than the vena saphena it suddenly fills up. Another experiment consists in placing the patient as before, and then compressing the saphenous vein with the fingers; the patient is then made to stand up; if the distension depends upon absence of the valves, the vein will fill very slowly as long as the compression is maintained; the moment it is relaxed the veins below bulge out at once.

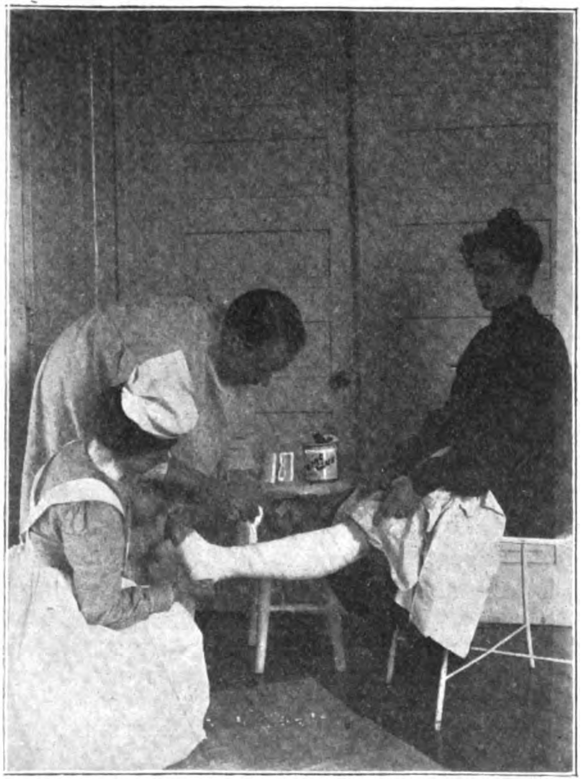
When we have referred any given case of varicose veins to either of the two groups mentioned, we adopt a different treatment according to the variety presented. It is evident that the absence of valves can be met in various ways; either by some external support that compresses the vein, or by ligation and excision of a part. Both these plans have been followed successfully. Pressure is exercised upon the vein by means of a water-filled bag that is pressed on it by a spring that does not constrict the extremity, but runs more or less parallel with it; or a small balloon is tied by a circular bandage, so that it exercises the same function. But there is both expense and annoyance in such apparatus, and the excision of a part of the vein accomplishes the same object, viz., that of interrupting the centrifugal current. The operation is a simple one, but not entirely free from danger, as the thrombus that necessarily follows may be partly detached, and give rise to an embolus. Under absolute asepsis such an embolus may be comparatively harmless, but even under those conditions it is an extremely serious complication. It is often sufficient to tie and resect a small piece of the vein a couple of inches below the falciform process of fascia lata; if the veins from the trunk are varicose, they must be tied and pieces resected. Frequently it becomes necessary to resect pieces of the saphena magna on the thigh and leg.

Where the valves at the upper end of the great saphenous vein are unable to perform their function no treatment short of resection gives hope of cure.

It is otherwise when the valves are physiologically effective. In these cases, as well as in those of absence of valve, excision has been performed with success; it will always be the most radical treatment that holds out the best hopes of permanent cure.

As in all cases of varicosities we find also here frequently serious nutritive changes in the skin. It is nearly always atrophic; very frequently it is the seat of eczema, edema around the ankles, ulcers and pains, which partly result from nutritive changes of the muscles of the leg. As operations on veins demand absolute asepsis, eszemas and ulcers must be thoroughly healed before resections of smaller or greater trunks are performed. In proportion to the severity of the eczema and the extent of the ulcer it may take longer or shorter time to effect a temporary cure of these affections; but if the patient is brought to bed, and the circulation thus relieved, these affections can as a rule be cured. The only exception is when ulcers have reached very large dimensions. But even in these cases Thiersch's skin transplantations may lead to a cure. The recumbent position is of more importance than any particular drug for the cure of the eczema or the ulcer. I should even be inclined to believe that they would get well without drug treatment if the affected limb were kept horizontal or elevated.

There are many mild cases of varicose veins that can be made quite comfortable by less radical means than bloody operations. Various mechanical devices have enjoyed popular favor. The simplest is the application of a flannel bandage, about 12 to 15 feet long and about 3 inches wide. This bandage does not interfere with the transpiration through the skin; they are comparatively inexpensive; the patient can learn to apply them himself or have some member of the family apply them. The Martin rubber bandage is perhaps even better, as it, properly applied, exercises a very even pressure. It, like the flannel bandage, is removed when the patient goes to bed; it is washed in soap water and hung up to dry over night. The objection to the Martin bandage is that it prevents the proper function of the skin. Another objection to all kinds of bandages, that the patient has to apply himself or through the agency of inexperienced assistants, is that they are often improperly applied. They must be put on very evenly, bind nowhere and exercise proper support everywhere. It is necessary when removable bandages are used to treat the skin by baths, to use gently stimulating wahes, give massage, and have suitable exercises performed. Some authors recommend bicycle-riding. I think walking preferable. Another bandage that enjoys great popularity, largely stimulated by the bandagists and the rubber trade, is



Mode of applying the zinc-glue bandage.

the elastic silk stocking. The objection to this bandage is its expense, as the first cost is not inconsiderable, and it becomes worn and flabby very soon and has to be replaced by a new one.

A far better bandage is the zinc glue that is made of gelatin, glycerin, zinc oxid, and water. It is heated in a water-bath and applied to the bare skin with a painter's brush. Then a gauze or cheesecloth bandage is applied, very evenly and not too tight; this is painted with the zinc-glue, and a new bandage applied outside of it. Outside of this comes a final muslin bandage which forms the outside of the dressing. This gives an excellent support, allows the patient to follow his occupation; the skin remains healthy under the glue, which absorbs the perspiration. Such a bandage may be worn from 5 to 8 weeks without change. It is not very expensive, anybody who can apply a roller bandage properly, can put it on. Dozens of my patients who have been almost in despair at the annoyance of their varicose legs, have been made comfortable by the zinc-glue bandage.

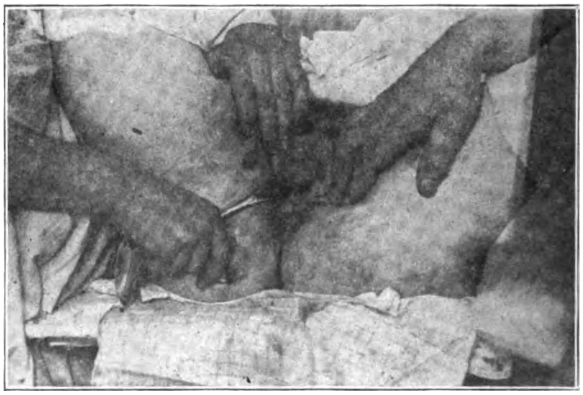
The severest case of varicose veins on the lower extremity that I have had under treatment, was a patient at St. Barnabas Hospital a few months ago. Not only were the saphenous veins on both legs enlarged, tortuous and prominent like small snakes, but the veins on the trunk emptying into the crural were enlarged, some of them to the size of 30 mm. circumference. The external pudic, circumflexa ilei, and external epigastric formed with the saphenous a veritable Medusa's head. The above-mentioned signs of Trendelenburg being present on the saphenous veins, there was excised a piece of each of them; the veins of the trunk did not show any signs of a centrifugal circulation. Pieces of them were also resected, as well as several on thigh and leg. Each side was operated separately so that the patient stayed in the hospital over four weeks. The surgical interferences were followed by no reaction and the patient went home well. He had particularly wanted the operation from fear of hemorrhage in case he should injure the badly exposed vessels on the legs. That the cure will remain permanent is doubtful; but I know of several cases where the Trendelenburg resection has been followed by perfect health for many years. But even if in course of time there should develop a new set of varicose veins, the patient has enjoyed a respite and there can probably be no danger that the veins will reach the enormous development they had before the operation.

DOUBLE VAGINA AND UTERUS

Service of Dr. C. H. Hunter

Mrs. X——, aged 28, came to me from the country. She was flowing and had been for 6 weeks with no pain. The cervix was small and soft; the uterus was enlarged and globular. Menstruation had begun at the usual time. She had had two miscarriages, the first being artificial, in the past three years. An application of iodin and packing of the vagina with iodoform gauze was sufficient to control the flow.

She returned the next day complaining of having had a gush of blood in the night. The packing, which was moderately soiled, was removed. There was no flow from the small ill-defined cervix. A fresh packing was inserted, and the advice given to go at once to the hospital. As the patient stepped down from the chair she was conscious of a sudden gush of blood. She was placed in Sim's position, and the packing was removed, of which only the lower portion was stained with bright red blood. Otherwise it was dry. In the manipulation a teaspoonful of bright blood escaped from a fold in the left wall of the introitus vaginæ. An opening the size of a lead pencil immediately behind a caruncle nymphæ led into a capacious cavity from which the blood flowed freely. This opening had been effectually closed and concealed in the previous examination by the bivalve speculum. The opening was gently but readily dilated to admit the finger to a second cervix. The flow ceased, and both vaginæ were packed. Under an anesthetic considerable debris was curetted from the right uterus. A sound passed into the left uterus touched the curette in the right only near the fundus. It is possible that this opening had been made in the septum by the curette.



Photograph of case of double vagina.

A close examination of the accompanying photograph shows how the septum lay behind the left hymen. A good drawing of two cervices in this rather rare anomaly is shown in Kelly's "Operative Gynecology."

NORTHWESTERN LANCET
A SEMIMONTHLY MEDICAL JOURNAL
The Official Organ of the Hennepin County Medical Society
W. A. JONES, M. D..................EDITOR
Editorial Office, 515 Pillsbury Building
W. L. KLEIN, PUBLISHER
SUBSCRIPTION, $2.00 A YEAR.
839-840 Lumber Exchange....................Minneapolis

JANUARY 15, 1904

CONSOLIDATION OF THE LANCET AND THE MEDICAL DIAL

It is with great pleasure that we announce the consolidation of *The Medical Dial* and THE LANCET.

The Dial was established several years ago by Drs. J. W. Macdonald and C. K. Bartlett, and they have been both editors and publishers. The aim of *The Dial* has been essentially the same as that of THE LANCET, namely, to represent the profession of the Northwest. So long as the two journals had a single aim, and the amount of medical literature produced did not exceed the capacity of either, one was more or less superfluous, and consolidation was highly desirable for the profession.

In the case of *The Dial* another difficulty arose: However well the editors might do their work, their numerous other duties would not permit them to attend to the details of publication, and as a publisher of a medical journal must possess, not only business ability, but no small amount of medical technical knowledge, it is difficult to find a successful one. In the early history of THE LANCET the same difficulty was encountered, and the paper languished for many years. Fortunately, we think, for all concerned, the two journals may now unite, and the friends of each join hands to make one strong journal that shall be representative of the medical profession of the great Northwest, and shall mark its progress in all matters medical.

Growing out of the consolidation, and mainly upon the suggestion and plan of the staff of St. Barnabas Hospital, of which Dr. Macdonald is a member, we inaugurate in this issue a new department, "The Hospital Bulletin," which will be open to all hospitals of the Northwest, and to which we hope many of the hospitals of the smaller cities and of the villages of the Northwest will contribute reports of cases. St. Barnabas gives in this issue an example of the work its staff proposes to do in this department. Certainly, no matter can be of more interest and value either to the general practitioner or to the specialist.

We hope to be able very soon to announce other improvements in this journal.

EDITORS' FAREWELL

The consolidation of THE NORTHWESTERN LANCET and *The Medical Dial* will meet, we are sure, with the approval of the friends and patrons of both journals.

In taking leave of our readers and advertisers we would express our thanks for their cordial support, and bespeak a continuance of their good will by transferring their patronage to THE LANCET, and we trust that by our combined efforts the interests of the profession, and of those who find medical journals a suitable advertising medium, will be better subserved in the Northwest than ever before.

J. W. MACDONALD, F. R. C. S.
C. K. BARTLETT, M. D.

DR. H. M. BRACKEN

Governor Van Sant has reappointed the present executive officer of the State Board of Health, Dr. H. M. Bracken, for a term of three years. An effort was made to prevent the appointment by the circulation of letters throughout the state. Probably some one wanted Dr. Bracken's place, or some one was dissatisfied with the forceful methods of the secretary.

THE LANCET offers its congratulations to Dr. Bracken, and the state at large, in his reappointment, and expects and hopes that the policy of the secretary will continue. No man who occupies a position of this kind can expect results unless he has the support of the medical profession. He must not be a sentimentalist, but a hard-headed, dominant, and fearless man, ready to do his duty in the face of persistent opposition, and to support his opinions by legal measures when, in his judgment and experience, the facts justify his beliefs. Such a man is Dr. Bracken, and his influence and power in the National Health Association should gather about him the ardent support of the medical men and sanitarians of Minnesota. When an epidemic prevails and the state officer resorts to measures to suppress it, he should receive every encouragement, even though the epidemic be mild and short-lived. It is in this way that severe and protracted epidemics begin, and continue unless stamped out effectively and thoroughly. No one can be a saint and a satisfactory health officer; the former must give way to the latter, if the public health is to be preserved.

The public records of the State Board of Health speak loudly for themselves, and Minnesota stands well to the front in the maintenance of health measures.

DR. C. H. HUNTER, PRESIDENT

The Hennepin County Medical Society at its annual meeting, January 4, 1904, elected Dr. Chas. H. Hunter its president for the coming year.

Dr. Hunter graduated from the College of Physicians and Surgeons in 1878. After three years of study in the clinics of Vienna and Berlin he settled in Minneapolis where he has since been in active practice. He was one of the energetic founders of the first medical school in Minneapolis, the old College Hospital Medical School, and he gave not only his time and work, but much of his money to keep the school in operation. At that time he taught pathology and internal medicine, and was untiring in his labors in general medicine. He was one of the two originators of the Minnesota Academy of Medicine, which is still a flourishing interurban society. His activities in behalf of the Hennepin County Medical Society have always been appreciated although tardily expressed by his recent election.

Many of the young men who have entered the field of Minneapolis within the past few years, and those of us who have been here for from ten to thirty years will always remember the right hand of fellowship, the cordial encouragement, the home life and the financial assistance which Dr. Hunter so graciously extended. As Dr. Hunter still retains his old-time energy and vigor, no one need doubt the success of the county society under his leadership.

The election was an important affair. Two candidates of nearly equal popularity were in the field for selection. On account of the friendly rivalry of the contestants, one hundred and thirty members responded to the call for votes, the largest meeting in the history of the society, except when the annual dinner, with the out-of-town celebrities, brings out almost the full membership.

The report of the treasurer of the Society shows a clean slate, with a surplus in the treasury. This is a cause for congratulation.

THE MINNEAPOLIS JOURNAL

Mr. Lucian Swift, the manager of the enterprising Minneapolis Evening Journal, is promulgating a reform that will in time change the attitude of the daily press, at least in Minnesota, toward quacks, quackery, and nostrums. With this new year all advertisements from well-known quacks have been returned with an emphatic refusal of advertising space in the Journal. This means a money loss of several thousand dollars to the Journal, but an elevation of standard that will attract a higher standard of advertising matter. It is not possible, or perhaps feasible, to refuse all medical advertising at first,—not until the things offered have been thoroughly investigated and critically analysed.

The Detroit Journal, a paper of large circulation, has eliminated all objectionable medical advertising from its columns. The Journal-Herald, of Huron, S. D., is perhaps the cleanest sheet of this kind published.

It would be extremely gratifying to the medical profession of the northwest, as well as clean education to the public in general, if the Minneapolis Journal was the first of the great city dailies to inaugurate the elimination of medical quackery from its publication.

Physicians and pharmacists are in a position to advise the poeple as to the contents of the bulk of patent medicines. Nearly all of these advertised cure-alls have been analysed by competent chemists, and the formulæ published in book form. The advertiser and the public are inclined to think the physician's condemnation of patent medicines is due to jealousy, and the desire to prescribe; yet how many know that the average patent compound contains from twenty-five to fifty-five per cent of alcohol, or is made up of ingredients that are fit only for horse liniment? The advertisement constitutes the mind cure; the alcohol, the stimulant; the opiate, the sedative of the vast number of so-called cures. The other drugs are immaterial. A celebrated form of bitters that flourished years ago and sold freely was composed of sour beer and epsom salts, yet the public paid one dollar a bottle for it, and rejoiced for a time, and then swung around to a more palatable form of stimulant.

The Minneapolis Journal is a great paper, and is doing an immense amount of good. The policy recently adopted, if pursued, will place it high among the dailies of the United States. It can educate a large number of people by its clean presentation of the news, its thoughtful editorials, and its freedom from medical matters that are debasing and body-destroying.

BOOK NOTICES

A MANUAL OF PRACTICAL HYGIENE FOR STUDENTS, PHYSICIANS, AND MEDICAL OFFICERS. By Charles Harrington, M. D., Assistant Professor in Hygiene in the Medical School of Harvard University. Second Edition, revised and enlarged. Illustrated with twelve plates in colors and monochrome, and one hundred and thirteen engravings, 748 pages. Lea Brothers & Co., Philadelphia and New York.

The object of the author, "to provide a students' text-book which should cover the most important topics included in the wide domain of Hygiene, and be useful in the laboratory and as a reference book for practitioners and health officers," has been accomplished in a most commendable fashion. The first edition, published a little over a year ago, was very well received, and in this edition a chapter on the relation of insects to human diseases has been added, and numerous changes and additions made throughout the work. The chapters on foods and food adulterations bring a great deal of valuable material into a relatively small compass. The very full chapter on water is worth the price of the book to the general practitioner. It is concise, practical, thoroughly up to date, and ends with a discussion of the comparative value of chemical and bacteriological analysis of drinking water, which every practitioner and health officer should read, because of the quite general lack of accurate knowledge of this question.

Chapters on habitations, schools, etc., sewage, garbage, disinfectants, and disinfection; naval and marine hygiene; tropical hygiene; the relation of insects to human diseases; hygiene of occupation; vital statistics; personal hygiene; vaccination and other preventive inoculations; quarantine and disposal of the dead,—all bring our knowledge up to date, and present it in such a readable, practical manner, that the book can be highly recommended. While the photomicrographs are good, those made from the starches are not adequate, it being impossible to show all that should be shown here in the way of structure and markings by this method of reproduction.

NEWS ITEMS

Dr. J. W. Wells, of St. Paul, has located in St. Peter.

Dr. S. B. Shaw has moved from Williston, N. D., to Minto, N. D.

Dr. J. C. Cummings, of Minneapolis, has located at St. Hilaire.

Dr. J. T. Newlove has moved from Towner, N. D., to Minot, N. D.

Dr. E. R. Jellison has given up practice at Clara City, and will locate elsewhere.

Drs. R. F. Whetstone and S. J. Brimhall, of Cass Lake, have dissolved partnership.

Dr. J. W. George, State University, '02, who has been practising at Hibbing has located at Aitken.

Dr. J. S. Holbrook has been elected county physician in Blue Earth County for the Mankato District.

Dr. A. W. Guest, of Buffalo, N. D., has gone to Jamestown as assistant physician in the state asylum.

Dr. F. T. Poehler, of Minneapolis, has purchased the practice of Dr. E. B. Jackson, of Mound City, S. D.

Dr. W. N. Palmer, of Valley City, N. D., was married last month to Miss Eleanor G. Lees, of Minneapolis.

Dr. G. L. Gosslee, a recent graduate of Hamline, who has been practicing at Tracy, has moved to Grandin, N. D.

Dr. Herbert Coulter, of Arlington, S. D., has gone to California, and will locate at Azusa, near Los Angeles.

Dr. W. A. Day, of Austin, has gone to Cavalier, N. D., and formed a partnership with Dr. F. M. Jones of that place.

Dr. W. P. Baldwin, of Casselton, N. D., and Miss Nellie H. Packard, of Minneapolis, were married last month in this city.

Dr. L. J. Lamb, of Brown's Valley, has decided not to accept the position offered him in a hospital at Black Hills, S. D.

Dr. A. C. Wedge, of Albert Lea, has retired from active practice at the age of 69. He has practiced in Albert Lea 46 years.

Dr. S. M. Souders, of Red Lodge, Mont., is putting up a building to be used as a hospital, and it will be thoroughly equipped.

Dr. L. D. Peck, a Hamline graduate of '02, who is practising at Hastings, has been appointed county physician for the Hastings district.

Dr. A. B. Anker, who has conducted the St. Paul City Hospital so successfully for a number of years, has resigned to accept the superintendency of the Presbyterian Hospital of Chicago.

The Cass County (N. D.) Medical Society met at Fargo last month, and after the regular program was finished, the society entertained at dinner the Clay-Becker (Minn.) Medical Association.

Dr. Christian Jelstrup has established a hospital at St. James in rented rooms, but it is hoped that the city will take hold of the project, and soon secure a building for exclusive use as a hospital.

Dr. Wm. H. Woods, one of the pioneer physicians of Minnesota, died at Owatonna last month. He began practice in Owatonna in 1856, and had practiced at Le Sueur, Madelia, and Blooming Prairie.

The Rice County Medical Society, which met at Faribault Jan. 2d, elected its old officers, as follows: President, Dr. F. M. Rose, Faribault; vice-president, Dr. W. A. Hunt, Northfield; secretary, Dr. F. R. Huxley, Faribault; treasurer, Dr. W. H. Robilliard, Faribault.

At the annual meeting of the Blue Earth County Medical Society, held last month at Mankato, the following were elected officers: President, Dr. E. J. Davis; vice-president, Dr. E. D. Steel; secretary, Dr. A. G. Liedhoff; treasurer, Dr. Lida Osborn; delegate, Dr. M. C. Curran.

The Yankton District Medical Society held its second regular meeting at Vermillion, S. D., on Dec. 31, and after listening to papers on "Pneumonia," "Etiology," and "Dignosis," officers were elected as follows: President, Dr. F. N. H. Gryllenhammar, of Grayville; secretary and treasurer, Dr. J. L. Stewart, of Irene; delegate, Dr. W. E. Moore, of Tyndall.

The Missoula County (Montana) Medical Society was formed last month at Missoula, being the first medical society in the county. The following were elected officers: President, Dr. G. T. McCullough; vice-president, Dr. Joseph Tremblay; secretary and treasurer, Dr. Russell Guinn; delegate, Dr. W. B. Parsons.

The Goodhue County Medical Society met in Red Wing on the 5th inst., but furnished no excitement for the country press, as it did at its former meeting. The following were elected officers: President, Dr. A. T. Conley, Cannon Falls; vice-president, Dr. B. Jaehnig, Red Wing; secretary, Dr. J. V. Anderson, Red Wing; treasurer, Dr. F. W. Dimmitt, Red Wing.

The Watertown District Medical Society, of South Dakota, met last month at Watertown, and spent the forenoon in the hospital witnessing operations performed by Dr. J. E. Moore, of Minneapolis. In the afternoon Dr. H. H. Clark, of Watertown, read a paper on "Home Apparatus Devised by the Surgeon Himself," and Dr. J. E. Moore spoke on "Appendicitis." The election of officers followed, resulting as follows: President, Dr. Edward T. Ramsey, of Clark; vice-president, Dr. O. G. Frink, of South Shore; secretary and treasurer, Dr. J. B. Vaugh, of Castlewood.

Dr. Edward Dolan, of Worthington, lost his life by accidental poisoning the last of December. On his way home from a country visit at night, he became sick, and took from his medicine case what proved to be carbolic acid. His driver attempted to reach town for aid, but was unable to do so. Dr. Dolan was a graduate of Bellevue, '73, and had built up a lucrative practice at Worthington.

WANTED

A physician with some experience, and lots of energy. A good opening for the right man. Best location in a city of 7,500. Address H, care of THE LANCET.

NORTHWESTERN LANCET

A Semimonthly Medical Journal

VOL. XXIV FEBRUARY 1, 1904 No. 3

SEPTIC ENDOCARDITIS*

By L. A. Nippert, M. D.

MINNEAPOLIS

As a possible complication and immediate cause of the exitus letalis in a large number of diseases, medical and surgical, fatal in a day or two after its onset or simulating less dangerous ailments until after a period of weeks or months its victim finally succumbs, septic endocarditis had not received, until in the last twenty years, the consideration which its importance merits. Although Dr. Kirks described the clinical course of this disease in 1851, and later Charcow, Virchow, and others elaborated its pathology, Dunglison's Dictionary of 1874 does not allude to it. Loomis, in "Pepper's System," 1885, devotes fifteen lines to the subject. In that year an exhaustive treatise was given by Dr. Osler in the Gulstonian Lectures in London. With the development of bacteriology, which has elucidated the formerly obscure causes of sepsis, septic endocarditis has been made the subject of extensive studies.

The synonyms of malignant, ulcerative, and diphtheritic endocarditis have been given by different authors, and are confusing, as they presume conditions which are not always found. We may have septic endocarditis without ulceration of the endocardium, and a sufficient number of recoveries have been reported by competent observers to exclude the term *malignant.*

"Septic endocarditis rarely occurs as an uncomplicated disease; it is rather a special manifestation in many affections" (Osler).

Its prominent features are the symptoms of sepsis, as irregular chills, fever, sweats, great depression, and anemia, combined with the signs of grave cardiac lesions, rapid, irregular pulse, weakened heart action, and various murmurs, with or without manifestations of embolic obstruction in different organs.

Morbid Anatomy.—At first the valves affected are found to be studded with small yellowish deposits. These contain granular detritus, fibrin, leucocytes, and micrococci. After attacking the superficial layers of the endocardium the destructive process involves the deeper tissues, leading to ulceration and destruction of the valves and even of the chordæ tendineæ. The detached particles carried into the circulation as emboli, lodge in different organs causing infarcts, which may lead to anemic necrosis or suppuration. Both sides of the heart may be affected, the mitral and aortic valves by preference.

Pathology.—1. That the disease may occur as a primary affection in persons in good health or having a previous valvular lesion, is admitted by most authors. However, it is to be expected that future investigation will relegate these idiopathic cases to the past, as it has primary peritonitis.

2. As a secondary non-suppurative affection it is found in rheumatism, pneumonia, chorea, and gonorrhea.

3. It may be of suppurative, septic, or pyogenic nature.

Of microbic origin one or more microörganisms can be active in its production, especially the septic or pyogenic. These organisms are—

---

*Read before the Hennepin County Medical Society, Minneapolis, November 2, 1903.

1. Streptococcus pyogenes.
2. Staphylococcus pyogenes albus and aureus.
3. Diplococcus pneumoniæ.
4. Gonococcus.
5. The bacilli of infectious diseases, such as influenza, diphtheria, tuberculosis, etc.

The first three are the most common. The paths of entrance can be prepared by traumatism or disease, the carrier being the blood.

ETIOLOGY.—No primary infection is so mild that it may not ultimately give rise to fatal endocarditis (Elsner). The infection may be caused by—

1. Traumatism, such as slight abrasions or contusion of skin or mucous membrane, the passing of a urethral sound, or ulcers.
2. Suppuration of the ear, gall-bladder, appendicitis, salpingitis, osteomyelitis, etc., from vaccination or elsewhere.
3. Pyemic infection, gonorrheal and puerperal.
4. Septic and infectious diseases, such as pneumonia, erysipelas, diphtheria, smallpox, scarlet fever, dysentery, tonsillitis, influenza, and tuberculosis.
5. Rheumatism, chorea, and malaria.

Occurring most frequently between the ages of 20 and 40, it is rare in children. The autumn, the septic season of the year, favors its develpment. Those depressed in mind and body, and living under unfavorable hygienic conditions, are more ready victims to any septic infection, the one in question included.

CLINICAL FEATURES.—The clinical symptoms of septic endocarditis are in a great measure modified, even obscured, by the primary disease. They are also influenced by the virulency of the infection. They may be divided into three groups:

1. The general manifestations of sepsis. There are iregular chills followed by intermittent or remittent temperature and profuse sweating. Anorexia, vomiting, sometimes constipation, but more frequently diarrhea with meteorism, mark the disturbance of the digestive system. The respirations are accelerated, and dyspnea and cardiac oppression may be prominent. The pulse is rapid, small, of low tension, and its other characteristics are determined by the location of the valves affected. The urine contains albumin and casts. In a short time anemia becomes apparent, the blood-count shows leucocytosis. Cultures from the blood may be negative or grow one or more forms of microörganism. The mind may remain clear or become clouded, as in typhoid, with low muttering delirium, or the latter assumes an active, even maniacal type, as in meningitis. In some acute cases an erythematous rash has been noticed, as in the following:

CASE 1. Clara H——, 15 years old, school girl, suffering from chronic nasopharyngeal catarrh and frequent attacks of tonsillitis; showed symptoms of chorea for four or five days in mild form. They became more and more severe so that she was compelled to go to bed on Friday. No manner of treatment influenced the spasms. There was no elevation of temperature, and while the pulse was accelerated it was strong and full, and the heart-sounds were normal. On Monday following she complained of great oppression in the chest, a chill followed, and the temperature rose to 100°, the pulse to 120 becoming small and irregular. On Tuesday her face and chest had patches of pink color similar to those seen in coal-gas poisoning. She died on Wednesday.

2. If, as in this patient, the infection is profound, death may occur before the second group of symptoms, those pointing to a lesion of the valves of the heart, have had time to develop. The diagnostic peculiarity of the latter group is the variability of the physical signs found on examination of the heart. Murmurs hardly audible may suddenly become rough and rasping or musical. A systolic murmur disappears, and a diastolic sound is heard, or a rough presystolic rumble may have vanished at a later examination owing to the rapid pathological changes of the valves, causing new deposits or ulcerations, and leading to stenosis or insufficiency. If life be prolonged, hypertrophy and dilatation are followed by the well-known symptoms of a failing right heart, such as enlargement of liver and spleen, and edema.

3. The third group of symptoms, those caused by lodgment of emboli, is the one most characteristic of septic endocarditis. To discuss the symptoms or the result of embolic obstruction in

the different organs is beyond the scope of this paper, and but a few of diagnostic aid shall be mentioned. These are enlargement and tenderness of the spleen, hematuria from infarct of the kidney, small extravasations into the retina, and the petechiæ resulting from showers of minute emboli.

CASE 2. Miss R——, age 26, school teacher, always in delicate health, was taken sick with headache, backache, soreness of throat, and repeated chills. Three days later an endocardial systolic murmur was discovered. The following day her abdomen showed numerous petechiæ, and death resulted one day later.

If the emboli are the carriers of septic germs, the already existing general infection is intensified and local symptoms of suppuration declare themselves.

The duration of the disease may be from a few days to many months. Pepper has recorded a unique case with intermittent periods of endocarditis and sepsis extending over ten years.

DIAGNOSIS.—It is well to remember that repeated irregular chills occurring after trauma or during the course of an infectious disease, may be the first indications of an endocardial complication. Variable heart-murmurs in a previously healthy organ fortify the assumption of grave cardiac lesion, and petechiæ and hemorrhage in the cord or symptoms of embolic obstruction elsewhere, confirm the diagnosis. The discovery of septic microörganisms in a culture from the blood leaves no room for doubt. Unfortunately, this investigation requires so much skill and time that as yet it is not available in the majority of patients met with in general practice. The diseases which are to be especially considered in the differential dignosis are—

1. Typhoid fever. The gradual onset, the temperature curve, the absence of repeated chills and cardiac oppression, the positive Widal reaction, succeeding crops of rose-spots disappearing on pressure, the finding of typhoid bacilli in the ejecta, and the failure to discover the signs of endocarditis, will enable us to differentiate this affection, with a tendency to recovery, from the one from which recovery is a rare exception.

2. Physical examination demonstrating foci of consolidation, the general history, and, above all, the discovery of tubercle-bacilli separate septic endocarditis from tuberculosis.

3. The history of exposure to contagion, and the development of the eruption with absence of heart lesion, assist in diagnosing hemorrhagic smallpox.

4. That the disease may closely resemble malaria, the temperature chart of the following case will show (See chart on page 42):

CASE 3. Seen with Dr. R. J. Hill. M. T——, female, aged 21; family history negative; in delicate health from the fourth to twelfth year; sick in bed for three to four weeks every winter. From her twelfth year until Sept. 1, 1902, her health was good. In that month she suffered from rheumatic pains in the toes. On November 1, 1902, she had severe and continued vomiting, and pain in the chest and through the bowels, with diarrhea. She was, however, up and about the house until the middle of January, 1903, when severe chills, followed by fever and sweats, set in. These, with vomiting, gastric distress, diarrhea, shortness of breath, cough, cardiac oppression, and some pain in the precordial region continued until her death two months later.

The double quotidian fall and rise of temperature from 97° to 104° or 105° is illustrated in the accompanying chart. She was somewhat jaundiced; the heart dulness considerably enlarged; variable, rough, and blowing systoles; diastolic and presystolic mumurs were readily distinguished. The liver and spleen were much enlarged (Fig. 1). Mucous râles over both lungs posteriorly. Large amount of albumin in urine with granular and epithelial casts. No petechiæ. Leucocyte count 10,000-12,000 Owing to unfavorable circumstances no blood-cultures were taken. Not until a nurse could be procured was an accurate record of her temperature obtained. No post-mortem examination permitted.

PROGNOSIS.—Accute cases are invariably fatal. Those of rheumatic or pneumonic origin may, exceptionally, recover with defective valves.

TREATMENT.—By preventing sepsis, by dealing promptly with focci of suppuration, by endeavoring to check attacks of acute rheumatism through the agency of the salicylates,—in short by combating the primary disease, we reduce the possibility of the development of septic endocarditis.

The disease established, absolute rest in bed, and attention to hygiene, nutrition, and elimination, with judicious employment of tonics and stimulants, are indicated. Special manifestations, such as precordial pain and dyspnea, can be ameliorated by anodynes, ice-bags, counter-irritation, and oxygen. Of drugs believed to be of service, quinine, bichloride of mercury, strychnia, camphor, and digitalis have the preference. The last-named remedy should be used cautiously, as a strong increase of the heart's action may favor the detachment of fibrin deposits from the valves.

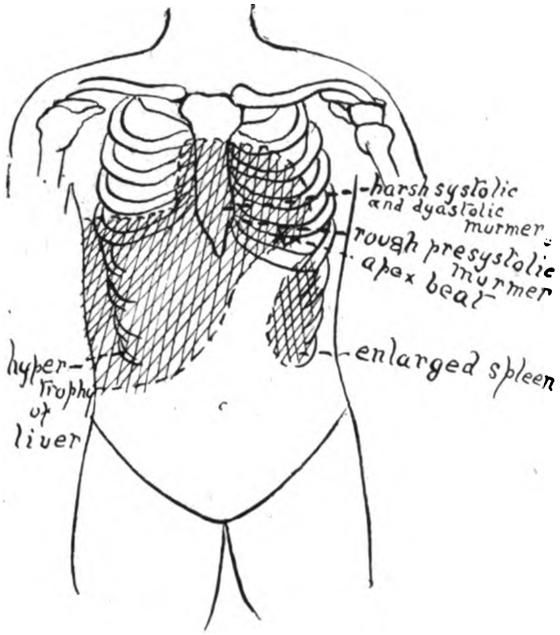


Fig. 1.

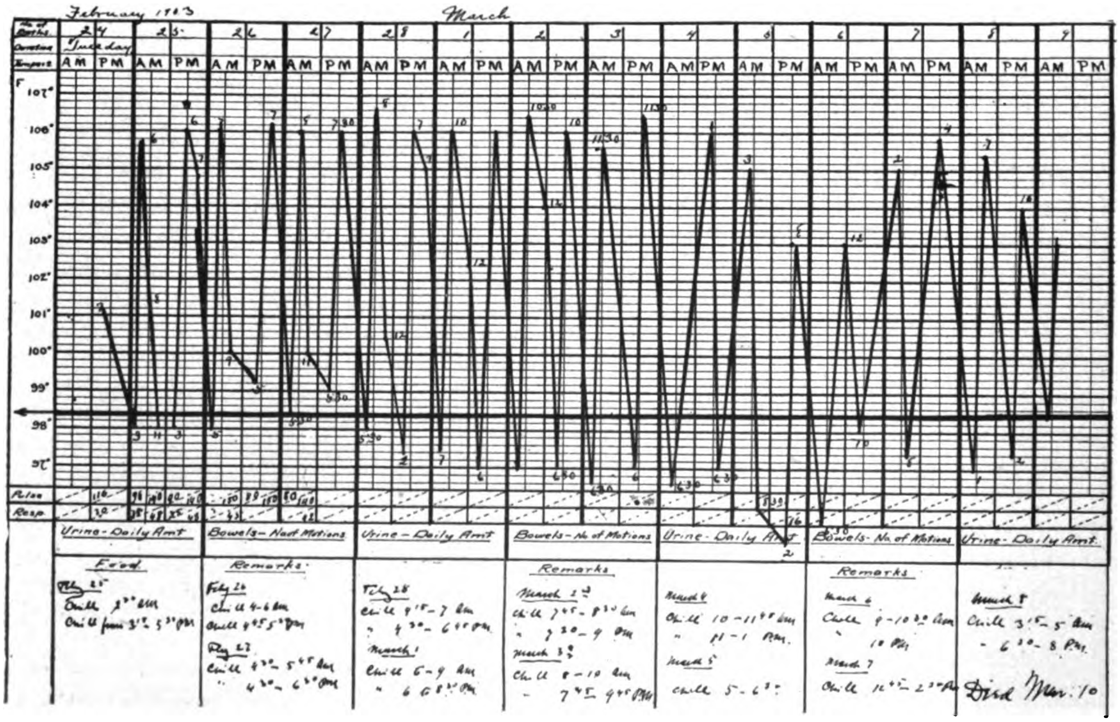
That faith not only transplants mountains, but also cures septic endocarditis is shown by a case reported to be cured by application of Ung. Crede.

Intravenous injection of collargol is exceedingly painful, and as most of the patients on whom it has been attempted died, this treatment is likely to become as popular as the intravenous use of formaldehyde for general sepsis.

In the present state of our knowledge the only hope for rational specific treatment of diseases caused by septic microörganisms is in the discovery of a serum capable of destroying their activity, and of neutralizing their toxins.

The serum prepared from cultures of a certain coccus or bacillus cannot be expected to be of any service, as a specific, in sepsis caused by another organism. The use of antistreptococcic serum is therefore not scientific nor rational in cases in which this coccus has not been found in cultures of the blood, the more so as the results of its administration in septic endocarditis are not encouraging, and can be summed up by quoting the concluding words of the report of a case in which the author states that "the serum seemed to do good, but the case terminated fatally."

Here, as in the treatment of other diseases, our therapeutic efforts should be dominated by the axiom, *Primum non nocere.*



Temperature Chart

MASTOID ABSCESS: ITS CAUSE AND PREVENTION*

By Frank C. Todd, M. D.

Professor of Ophthalmology and Otology, University of Minnesota

MINNEAPOLIS

In studying the prophylaxis of any disease, we must first determine its etiologic factors; hence the reason for combining these two subjects.

The occasions when mastoiditis results from other affections than suppuration of the middle ear or when the pus travels by way of the middle ear without involvement of that cavity are so rare that they need not be here considered. This leads us then first to the consideration of the

CAUSES OF A MIDDLE EAR ABSCESS

With few exceptions suppuration of the middle ear takes place as a result of infection from the nose and throat, which travels by way of the Eustachian tube. These exceptions are when infection takes place from metastasis or by way of the external auditory canal or from a parotid abscess. In the prevention, therefore, of a middle ear abscess, we must consider these causal factors.

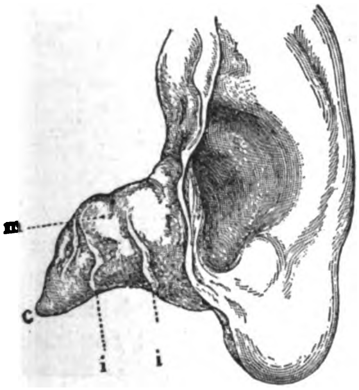


Fig. 1.—The cartilaginous meatus (Politzer). i, i, Incisures of Santorini.

1. Parotid Abscess.—Abscesses in the parotid gland occasionally result in middle ear abscesses, or directly involve the mastoid by the pus burrowing underneath the periosteum, along the canal, into the middle ear. This is more liable to happen in children where the skin lining of the canal is not firmly attached and where the bone has not completely formed, or, more indirectly and more commonly, through the medium of the external auditory canal the abscess rupturing through the incisures of Santorini, (these are fissures filled in with fibrous tissue in the cartilaginous portion of the external auditory canal situated antero-inferiorly, i. e., just over the parotid gland—Fig. 2), which might then infect the middle ear by way of the external auditory canal. It therefore behooves the surgeon to open and drain a parotid abscess early, if for no other reason than to prevent the possibility of mastoid infection.

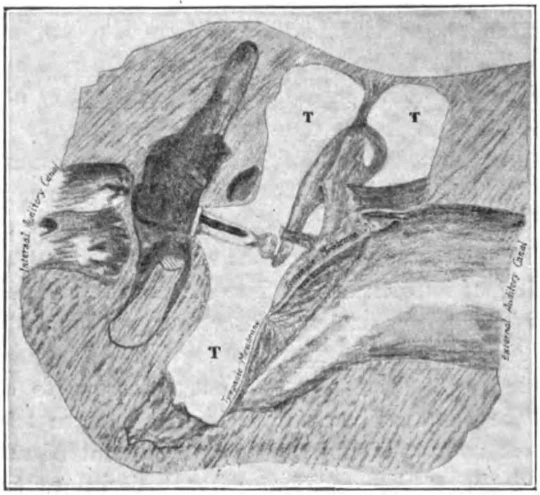


Fig. 2.—T, T, T, the tympanum, or middle ear, containing the ossicles.

2. Suppuration in the External Auditory Canal.—As a consequence of suppuration in the external auditory canal, the ear-drum may become involved, perforation taking place, and infection of the middle ear result, or, more rarely, infection may be carried through the blood-current, or, following the introduction of foreign bodies, the drum may become injured and infection of the middle ear result. The latter accident more commonly happens as a consequence of injury to the drum or lining of the canal in attempts at removal of foreign bodies from the external auditory canal than from the foreign

---

*Read before the Southern Minnesota Medical Society, at Winona, August 6, 1903.

body itself. In the prevention, therefore, of this source of infection of the middle ear, we must early incise abscesses in the external auditory canal, and speedily cure suppuration in this structure; and, inasmuch as foreign bodies in this locality of themselves practically do no harm, the injury which results being caused by unskilled attempts at removal with unsuitable instruments, foreign bodies not easily removed by simple means, such as syringing, had best be left untouched for the time being at least (Fig. 2).

3. Infection from the Nose and Throat.—This part of the subject is most important because with few exceptions middle ear abscesses and mastoid abscesses take their origin from this locality. I am convinced from personal experience with middle ear abscesses that there are many cases which would not exist if each case could be handled in an ideal manner. When infection exists in the nose or throat, whether it be a simple cold in the head or accompanies any of the infectious diseases, it does not matter how severe it is if we can prevent the entrance of the bacteria into the middle ear and the channel by which such infection travels in the Eustachian tube. Now, when infection of the middle ear takes place as a consequence of the infection traveling of its own accord into the Eustachian tube without any extraneous force, the only means of prevention lies in the treatment of the nasopharyngeal disease. It is not necessary to describe what will be found in any modern textbook upon the subject of the treatment of nose and throat diseases, but what I desire to emphasize particularly is that the treatment of these nasopharyngeal affections is just what often causes infection of the middle ear, and I believe often prolongs and increases the very nasopharyngeal disease which it is intended to cure. I refer to the prevalent use of douches and sprays in the nose in the treatment of acute diseases. While we may not be able to prevent many cases of middle ear abscess that result from an infectious inflammation of the Eustachian tube, we may be able to prevent those cases which result directly from an infection forced into the tube or the middle ear by way of the tube. To this class belong those cases which follow, and are caused by, douching, spraying, washing, or snuffing up the nose. By one of these means the infection is forced back into the nasopharynx and into the Eustachian tube, and often forced entirely into the middle ear. Many such middle ear abscesses result within twenty-four hours, or even twelve hours after such procedure. To this class also belong the many cases of infections of the middle ear, which result from forcible attempts by the patient at clearing the nose, either following or independent of the spraying or douching. To illustrate I report briefly two cases:

Case 1.—Doctor R——, physician, aged 30, during an attack of grip in the head, used as a nasal douche an alkaline solution; immediately afterward blowing the nose he felt something go in the left ear. Within a few hours earache in this ear became manifest. In the morning the ear commenced to discharge, pain relieved, and on examination I found a perforated ear-drum, acute middle ear suppuration.

Case 2.—S. T——, male, aged 75, has had atrophic rhinitis for many years, and been in the habit of using a douche in nose. Used douche of salt water last night followed by forcible blowing of the nose; found this morning both ears discharging, though he has suffered no pain but deafness. Examination reveals perforations in both drums with foul purulent discharge.

Hence we may prevent many cases of suppurative otitis media by avoiding the use of sprays and douches in acute nasopharyngeal affections, or by their careful use in other cases. Far better is it to allow nature to run its course, or use only systemic treatment, and in those cases that require cleansing and local applications, particularly chronic pus infections, to take care that the Eustachian tube is not allowed to become a blind sewer. If the douche must be used, there should be no force, and the patient should be instructed to tip his head to the right side when the fluid is poured into the left side, and *vice versa*. He should then at once lean his head forward, and allow the fluid to run out of the anterior nares, and should not blow his nose for several minutes after the douching; even then, as at all times when an acute rhinitis is present or when there is much secretion, he should keep both nostrils open, and avoid blowing hard enough to force open the Eustachian tubes. It will often be found better to remove crusts and pus with a cotton-tipped probe, and to make applications in this manner, than to douche or spray.

WHEN A MIDDLE EAR ABSCESS ALREADY EXISTS

We have now to consider why mastoiditis results in some cases of middle ear abscess, and does not in others; and before going further it is necessary to review the anatomy of these parts. Let us remember that the mastoid cells connect with the middle ear (tympanum)—Fig. 3—by way of the mastoid antrum, which is really only an enlarged cell situated behind and above the tympanum, and which is directly connected with it through the aditus ad antrum (these two cavities, tympanum and antrum, are virtually then only two segments of a single large bone-cell, having a constriction in the middle). It is this constriction that saves many people from mastoid abscess, for it is the only bony connection between the middle ear and antrum, and hence the only bony connection between the middle ear and mastoid cells. The antrum is the only mastoid air cell that exists at birth and during the first months. In different individuals the mastoid cells vary in size and number, but they all ultimately communicate with, and in fact radiate from, the antrum, like the "spokes of a wheel from the tub." The tympanum is lined with glandular mucous membrane, which is continuous with the lining of the Eustachian tube and nasopharynx and also with the air cells. The area of this membrane is therefore great, and it is capable of secreting an abundance of mucus.

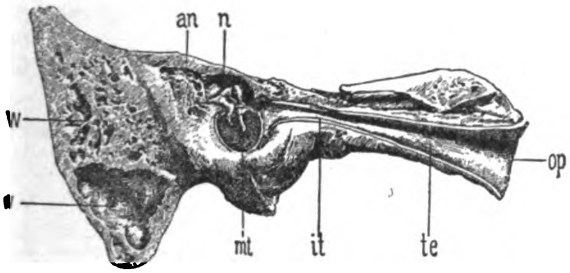


Fig. 3.—Section through mastoid, tympanum, and Eustachian tube (Politzer). W. W, mastoid cells; mt, membrana tympani; an, antrum; n, vault of tympanus; it, isthmus of tube; te, Eustachian tube; op. Eustachian tube fice of tube.

Bearing these facts in mind we may now readily see why we not infrequently have mastoid abscesses resulting from middle ear abscesses. The ordinary course of this disease is from the throat by way of the Eustachian tube to the middle ear, through the aditus ad antrum to the antrum, and thence to the mastoid cells. In a suppuration of the middle ear which is not severe enough to involve the mastoid antrum and cells early, or before free drainage through the drum is secured, there occurs a swelling of the mucous membrane sufficient to close the aditus ad antrum, and thus prevent the pus from entering the antrum. Hence the necessity of an early and free incision in the drum in the case of a middle ear abscess, and the necessity of keeping this perforation large, and by this I mean that if drainage is not sufficiently free after a slit perforation, a portion of the drum should be removed. The external auditory canal must serve as a drainage tube, which should not be allowed to become clogged. It will therefore require frequent syringing and wiping away of the products of inflammation. The use of powders in the canal during free suppuration will only defeat the purpose to maintain drainage, and should therefore be avoided.

There is no question in my mind but that there are many cases in which the mastoid antrum, and even the mastoid cells, secrete pus without any of the symptoms of mastoid involvement, and in which recovery takes place without opening into the cells. In such cases it is evident that the communicating channel between the cells and middle ear (the aditus) is free, and the pus gains sufficient exit through the ear drum. This being true it emphasizes all the more the importance of maintaining free drainage through the drum.

Now, when we have involvement of the mastoid cells sufficient to necessitate operative interference, we find that it comes on very soon after the formation of a middle ear abscess, or more frequently a week or two later. In the latter event it is common experience that the discharge from the middle ear has diminished, and why? Because the aditus ad antrum has closed, and the pus has gone on forming in the mastoid cells, but cannot gain exit; the symptoms of mastoid involvement then become evident, and a prompt opening into the cells and antrum imperative.

I have on my records a number of cases of mastoid abscess, and one in which septic meningitis followed, resulting in death, which I have attributed to the free use of peroxide of hydrogen during the progress of an acute middle ear suppuration, and I cannot too strongly condemn the use of this dangerous remedy in the treatment of such an affection. In most cases where it is used there is a small rupture of the drum, which readily allows the thin peroxide of hydrogen to gain entrance to the suppurating cavity where it meets the pus, causing it to bubble and effervesce, and forcing the pus in every direction. It would seem unnecessary to dwell upon this point since any surgeon can reason it out for himself, were it not for the fact that it is commonly advised treatment in our text-books and hence common practice.

As an aid in the prevention of a mastoid abscess blood-letting by means of leeches applied over the mastoid, as well as depletion with cathartics, will be found of value. In the early stages cold applications may be of service, though I rarely resort to them as I feel that they are not without danger because they sometimes encourage necrosis. In regard to the so-called Wilde's incision which consists in cutting the soft parts down to the bone and not entering the bone, I will repeat what I have written before: It seems to me of no more value as a therapeutic measure than free blood-letting, and if one performs the operation for exploratory purposes, he may as well go a step further, make an opening into the bone, and not subject his patient to a second operation. It is in fact an operation entirely unjustifiable and liable to be a dangerous procedure, for it gives an operator false security.

In spite of all of these preventive measures, mastoid abscesses often result, and this is true even in those cases where we are enabled to carry out in an "ideal" manner our prophylaxis, and in many other cases mastoiditis has gained sufficient headway to require operative measures by the time we are first called.

Though the wisdom of thorough prophylaxis cannot be questioned, let us not carry it to the extent of delaying too long the opening into the cells when necessary. When it is believed that a mastoid abscess exists an early and complete operation should be performed. I have never had ill results from doing an early mastoid operation, though I have operated upon several cases too late. I am aware that some cases get well without operation, and I have treated such cases myself, but I believe that the surgeon who has made a diagnosis of the presence of pus in the mastoid is tempting fate to delay opening into the cells; and I will go a step further and suggest the rule, that when a case fails to improve under the measures suggested or there exists a doubt in the mind of the surgeon as to whether or not an immediate operation is necessary, the patient should be given the benefit of that doubt, and the operation be performed.

IMPROVEMENT OF VITAL STATISTICS

At the recent meeting of the American Public Health Association held at Washington, the committee on vital statistics reported that effective co-operation had been instituted between that association, the Conference of State Boards of Health, the American Medical Association, the United States Census Bureau, and the United States Public Health and Marine-Hospital Service for the improvement of the vital statistics of this country. Among the objects sought are the extension of adequate methods of registration, the use of uniform and comparable tables and rates in bulletins and reports, and the improvement of the international classification of causes of death. A pamphlet on "Statistical Treatment of Causes of Death" has been issued by the United States Census Bureau, requests for which should be addressed to Mr. W. A. King, Chief Statistician for Vital Statistics, Census Bureau.

It has special reference to the difficulties encountered in compiling deaths returned from several causes, and asks for the co-operaton of the profession in framing a thoroughly satisfactory method of procedure in such cases.

RESOLUTION

A resolution looking to the preservation of sight and hearing of school children having been adopted by the American Medical Association and the Minnesota State Medical Society, which reads as follows:

"Whereas, the value of perfect sight and hearing is not fully appreciated by educators and the neglect of the delicate organs of vision and hearing often leads to disease of these structures, therefore be it—

Resolved, that it is the sense of the American Medical Association that measures be taken by boards of health, boards of education and school authorities, and, where possible, legislation be secured looking to the examination of the eyes and ears of all school children that disease in its incipiency may be discovered and corrected." Now therefore be it—

Resolved by the Blue Earth County Medical Society, that we adopt the above resolutions as voicing the sentiments of this society, and pledge our support to such measures as will tend to bring about the end therein sought.

THE HOSPITAL BULLETIN

ST. BARNABAS' REPORTS

MINNEAPOLIS

CEREBROSPINAL MENINGITIS FOLLOWING PNEUMONIA

Mr. W—— entered St. Barnabas hospital Oct. 21, 1903, Dr. W. H. Aurand, attending physician. A history of pneumonia last spring was obtained. The following extract is taken from Dr. Aurand's notes upon the case:

I was called to see Mr. W—— Oct. 20, 1903. He had fainted while driving his wagon down town, and had fallen from the seat. Temperature was 101°; pulse, 100. He vomited considerably at first, and complained of pain in frontal region. He said he had been troubled with pain around heart of late. Apex of heart was pushed over to right under the sternum and in the 7th interspace. I was called again that night. Patient had struggled terribly, complaining bitterly of pain in head. I ordered ¼ gr. morphin to be given hypodermically, and cold compresses to be applied to head.

Oct. 21.—To-day signs of meningitis with stiff neck and board-like abdomen. Pain is now in occipital region. This afternoon struggling was intense, requiring ½ gr. morphin to quiet him. I took him to St. Barnabas hospital. Pulse, 92; temperature, 104° per rectum. Kernig's sign present together with stiff neck. Bowels had not moved since yesterday. Patient unconscious. Patient died at 11:55 p. m. without having regained consciousness.

POST-MORTEM FINDINGS

Dr. S. Marx White, Pathologist

Autopsy Diagnosis.—1. Acute cerebrospinal meningitis due to diplococcus pneumoniæ. 2. Chronic fibroid pneumonia, left lung, lower lobe. 3. Chronic pleuritis, especially marked over right lower lobe with adhesions to pericardium. 4. Chronic adhesive pericarditis. 5. Acute splenitis.

Lungs.—Right, a few firm guy-rope adhesions over lower portion of lower lobe. Lung somewhat emphysematous, and does not collapse. Left, numerous fibrous adhesions over lung. Right and left lower lobes contain but little air. There is an increase in fibrous tissue. Right lower lobe is adherent to pericardium.

Heart.—Pericardium is adherent to surface of heart.

Scalp and Skull.—There are no evidences of injury or infection.

Membranes of Brain.—No evidence of injury.

Brain.—Over both convexities frontal and outer sides of sphenoidal lobes, pons, in the fissure between cerebellum and cerebrum, over the cerebellum and along courses of blood-vessels, is a greenish fibropurulent exudate. Blood-vessels are congested, and about ʒiii of a thin, cloudy, somewhat blood-stained fluid is present between the membranes, and flows slowly out of the spinal canal, after removal of the contents of the cranial cavity.

Bacteriological Examination.—Diplococci pneumoniæ in pure culture obtained from exudate beneath the pia, as well as from lungs, spleen, and liver.

CASES OF PANCREATIC DISEASE

Service of Dr. C. H. Hunter

These cases have some symptoms in common, convey a timely lesson, and are reported together, although not all have occurred in the hospital.

Mr. D——, aged 40, previously healthy, is seized suddenly with severe pain in the upper abdomen, right side, extending to right shoulder-blade. The center of tenderness is below the end of the 9th rib, at which point is also a globular swelling. There is vomiting, chilliness, some fever, a rapid pulse, and anxious facies. Within the first 24 hours there is marked jaundice, biled-stained urine, and light-colored, foul stools. After a short illness of a week convalescence began under Carlsbad and calomel, and morphin for pain. The diagnosis of gallstone and cholangitis to explain the symptoms of infection seems likely to have been correct though no stones were found. During the second week of convalescence he went to a sanatorium the better to recover, where he was quite unexpectedly seized again with violent pain, and fell rapidly into collapse. A surgeon was hastily summoned who opened the abdomen, and finding a dark-bloody, matted mass of tissues in the gall-duct region closed it again under the impression that he had to do with a cancerous disease; and yet the patient recovered, and is now, twelve years after, well. My exegisis of the case following Victor Robson is, that the second attack was due to the infective process extending to the pancreas causing hemorrhagic pancreatitis. It is probable that prompt and successful drainage of the gall-bladder in the first would have prevented the second attack.

Mr. O——, fireman, aged 35, robust, was seized after lunch with violent pain in the upper abdomen. There was vomiting and some tenderness, and tympany. The attendant looked upon the case as one of acute indigestion, controlled the pain with hypodermics, and gave castor oil. By the next morning the patient was in a critical condition. There were albumin, blood and casts in the urine. In the evening when I saw him for the first time, the thirtieth hour of his illness, he was in extremis. His mind was clear; his face anxious and bathed in a cool sweat; tongue moist, and white; some nausea; respiration hurried; temperature, 100°; pulse, 130 and thready, but not hard; some tympany; area of splenic and hepatic dullness lessened; nowhere dull or especially tender areas. There was no distress on deep palpation; some resistance in the epigastric region; there had been no obstipation, the bowels responding readily to the castor oil.

I confessed myself at a loss for a diagnosis. It seemd hardly peritonitis, but had more the appearance of an internal hemorrhage, the cause of which was not apparent. He seemed too far gone for laparotomy to offer any relief. He died three hours later.

At a post-mortem held eighteen hours after death I found a quart or more of thin reddish fluid in the abdominal cavity, the intestines dilated, bluish, injected, but nowhere a trace of fibrinous exudate. The mesentery presented many yellowish-white, irregular spots in the peritonal layer, larger and more numerous the nearer the pancreas is approached—fat necrosis. The pancreas itself is soft and swollen; its coverings torn up by numerous hemorrhages; its cut surface running, hemorrhagic, and disorganized; its ducts pervious. The darkened mucous surfaces were deeply injected.

The macroscopic appearances were those described in connection with hemorrhagic pancreatitis, nor does it seem that a diagnosis of this rather rare ailment should have been difficult. Very early laparotomy and drainage would have been appropriate.

Mrs. K——, aged 56, no previous illness, head of a large and successful boarding-house, hard working, and very large and very fat, was seized with pain in the upper abdomen, not attributable to any error of eating. There was soon some nausea and vomiting. The bowels moved with divided doses of calomel and enemata. Hypodermics and chloranodyne controlled the pain, severe and colicky at times. The pain seemed confined to the epigastrium. The temperature did not go above 101°; the pulse remained below 100°. The facies was at times anxious. The skin remained fair and sclerotic, while heart, lungs, and kidneys were negative. There was nothing of significance about the stools. There was deep seated tenderness in the epigastrium, but indefinite through the very fat abdominal wall. Operation was proposed, but rejected, and not urged on account of fat, indefinite diagnosis, and the speedy betterment of symptoms. By the end of the second week she was sitting up in bed. The pain recurred at lengthening intervals. Emaciation was marked. There now was apparent a tender, smooth, very tense swelling occupying two-thirds of the epigastrium. Sugar appeared in the urine. It seemed probable that we were dealing with some disease of the pancreas amenable to operation, but it was not confirmed by consultation, though no definite diagnosis was offered. Operation was rejected.

The patient got about slowly. Sugar continued in the urine. After about three months the patient brought me two stones passed per anum. They were non-faceted, bean-sized, dark-colored, roughish stones, crumbling easily into greyish dust. No cholesterine crystals. Apparently they were of lime salts. The tender swelling in the epigastrium had by this time disappeared. The absence of sugar was noted only while most rigid diet was enforced. Soon after the patient passed from my observation. I learned of her as suffering varying degrees of ill health, and dying of consumption the following year, an infection of which there was no sign in her early illness. No post-mortem.

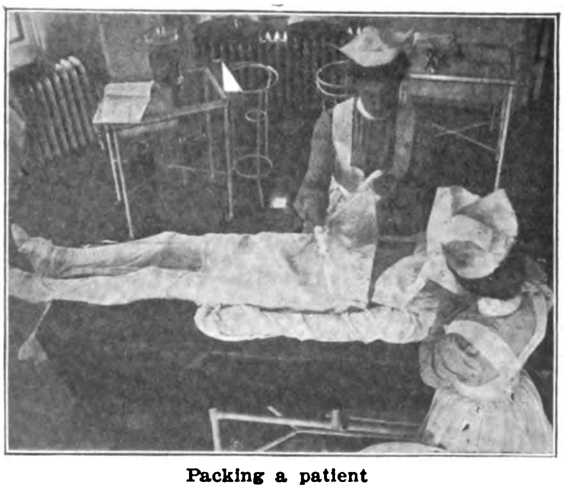
Exegesis.—Pancreatic stone of unknown origin. Retention cyst of pancreas. Injury to the islands of Langerhans by some inflammatory process, and development of diabetes. Infection with tubercle-bacillus and "quick consumption." This about islands of Langerhans would need post-mortem confirmation. It is, however, in consonance with Opie's work.

Mr. B——, aged 48, traveling salesman, robust, always well till 1898, when he had an attack of pain in the bowels, colicky, severe in right iliac region and pit of stomach, fever lasting ten days. In 1899 he lost weight, felt ill, sugar was found in urine. After some months of dieting, it disappeared. In 1900 he was seized with severe pain in right hypochondrium, became markedly jaundiced, was in bed six weeks. Diabetes returned, and jaundice gradually disappeared. Had very little pain after beginning of attack. During 1901 felt ill chiefly with diabetic symptoms. In 1902 attended to business fairly well. Sugar absent most of the time till Christmas when pain in the region of the liver passing back to the right shoulder-blade became steady, and troublesome. He became irritable and hard to manage. He entered the hospital for a four weeks' stay. The pain required morphin. The tongue is furred, and bowels irregular. The temperature is noted at 98° to 100°; pulse, 60 to 80. A slight cough, a stitch pain in right lower chest, where dulness, fine friction râles at times, and bronchial breathing are noted. For a time there is flatness for nearly a hand's breadth in the lower right chest. The liver region is tender. There is some tympany. The gall-bladder cannot be felt. There is no jaundice. The urine contains a few hyalin casts, no albumin, no sugar. The sp. gr. is noted once at 1.035. The hemoglobin estimate is 88 per cent. The whites are 17,000 to 18,600—several counts. The irritability amounted at times to delirium, or a mild mania. Under Carlsbad salts, sodium salicylate and hydrotherapeutic measures to the hypochondriac region and morphin (gr. ½) as needed, there was a gradual improvement. Operative interference was refused. Convalescence was slow. There is no constant reappearance of sugar. He is now (1904) attending to business in Michigan.

The attack of epigastric pain and glycosuria, preceding the attack of colic and jaundice, would point to the trouble beginning in the pancreatic ducts, and later extending to the gall-ducts. If it is ever our good fortune to get a look at the islands of Langerhans the "findings" will be reported in this place.

THE COLD TOWEL PACK

The towel pack requires 1 rubber sheet long enough to extend above the head and below the feet; 1 pitcher of cold water; 1 small basin of warm water at about 90° F.; a large basin containing ice and a liberal amount of water, the ice being tied up firmly in a towel to prevent the patient being annoyed by the rattling as each towel is removed; 10 towels, preferably Turkish-bath without fringe, 4 large, the



Packing a patient

remainder small; one large towel for drying purposes; also a glass of drinking water and ½ oz. of whiskey; 2 blankets and a hot-water bottle.

Place the rubber sheet over a register or radiator to warm slightly, to prevent discomfort to patient as he is turned on it, then remove all bed-clothing, leaving only a blanket on the patient; next place the rubber sheet under him, and have him lying perfectly straight flat on his back. Nearly all cases requiring a cold towel pack feel better for having hot-water bottle placed to feet at the beginning.

Next wring out a small towel from the ice-basin, fold it and apply firmly to forehead and temples. Now begin the pack by wringing out a large towel from the warm water, place it on the trunk from neck to groins, fold the corners once over so that two thicknesses will cover the femoral artery; next a small towel on each arm, tucking several folds of it into the axilla to cover large blood-vessels; next put a large towel on each leg, folding it well around inner thigh and under the knee. By this time the blanket will have been entirely removed. Then begin changing towels with first one applied, the head, neck, trunk, etc. Add cold water from the pitcher until you get the patient to the ice stage, about the third changing. The towels may be allowed to remain on a longer or shorter time, as the heat is absorbed, but as a rule by the time the last one is changed the first is warm. The patient may complain of cold, and shiver, but if his pulse is full and regular, and no sign of blueness of face or finger-nails appears, the bath may be continued full time, which is about 30 minutes. It will satisfy him somewhat to throw a blanket over him for a few minutes, the towels remaining in place. About 20 minutes may be taken up bathing in this manner. Then leaving the towels in place, turn the patient on one side, and begin the spinal column pack, as at the beginning; first a warm towel (large), then cold, then ice. Ten minutes may be given to the back. Care should be exercised to place the towels on patient rapidly, laying the whole towel on at once, not piece by piece or rolled out. Dragging an ice-cloth over a hot, chafed skin is almost excruciating.

The towels should also be left quite wet, not thoroughly dry. After the back has been sufficiently cooled, remove the wet towel; with it, take up the moisture in the rubber sheet, throw blanket over patient, remove towels from head, neck, trunk, uppermost arm, and leg; dry exposed surface with bath towel, by patting, not rubbing. A patient who has an ice-bath every three or four hours has an exceedingly sensitive skin, and care must be taken to preserve it. Next go to the other side of the bed, turn patient slowly on dry blanket, remove remaining towels rapidly, and following up by drying as he turns; remove rubber sheet; finish drying, and tuck snugly into blankets in whatever position he desires. If patient's vitality is low, and reaction does not seem likely to take place within 30 minutes, the whiskey may now be given, in any case a warm drink of milk or broth is desirable. Many patients object to the blankets next the skin, even for a short time, and unless their condition demands it the blankets may be left off and linen or cotton bedclothes put on at once, being careful, however, to see that sufficient blankets are put on to get patient comfortably warm.

BOSTON MEDICAL LIBRARY
APR 13 1905

As to stopping the bath should blueness or faulty heart action appear, the giving of stimulants, warm drinks, etc., application of external heat, no individual rules can be laid down. This may all be left to the nurse who knows something of symptomatology and her patient's temperament. E. H.

PUPIL NURSES

The accompanying cut represents the pupil nurses of the Asbury and St. Barnabas hos-

pitals in a class in cooking. The course consists of thirteen lessons, given in the well-equipped kitchens of the Y. W. C. A. building, under the efficient direction of Miss Dahl, a graduate of the Drexel Institute of Philadelphia. Particular attention is given to invalid cooking, the making of nourishing broths, ices, koumiss, drinks, etc.; the relative food values and their preservation during the process of cooking, and to serving the same in a wholesome, tempting manner. These practical lessons are supplemented by lectures at the hospitals on the digestion, assimilation, and absorption of food stuffs.

CASES IN PRIVATE PRACTICE

A CASE OF RHEUMATIC IRITIS, MILD OPTIC NEURITIS(?), AND INTERESTING NASAL COMPLICATIONS, INCLUDING SPHENOIDITIS

By Edward J. Brown, M. D.,
Minneapolis, Minn.

P. L——, aged 26, a farm laborer, was referred to me by Dr. M. E. Woodling of this city, on March 25, 1901, suffering with an inflammation of the right eye. He had had an attack of inflammatory rheumatism, about a month before, from which he was recovering, when two weeks before his visit the eye became red and painful.

He had been using eye-drops, prescribed by a physician in the country, but they probably did not contain atropin, as the pupil was not dilated. Vision was R 20-100, L nearly 20-20. The bulbar conjunctiva was reddened, the pupil contracted, and the iris dull. The upper part of the pupil dilated without much difficulty, but the lower part was adherent to the anterior capsule, and did not yield to atropia until after some days of heroic treatment. He was sent to the hospital and treated vigorously with atropia, hot fomentations, and large doses of sodium salicylate. As the case proved more stubborn than was anticipated, several pilocarpin sweats were given, following which the condition began to mend, and by April 22d the eye was nearly white, and vision was getting clear.

Vision was 20-30 plus, and the media clear, but I was surprised to find an indistinctness of the disc margin, suggestive of papillitis, and, on taking the field, considerable contraction for form and color. The fields of the left eye were very similar, but ophthalmoscopic examination was negative. The right eye accepted a half diopter convex cylinder, but vision was not materially improved. At this point I learned that the right eye had been struck by a base-ball when he was twelve years old, which may have been a causative element in the case, though there was no definite history or signs to prove it. He also stated that he had had, for some time past, and especially when he had a cold, a painful sensation back of the eye and nose, which was increased by jarring or shaking the head. I felt so much in doubt of there being any optic neuritis, that I was content with watching and waiting. Examination of the nose revealed a large spur obstructing the posterior left naris, with the remaining structures fairly normal. This spur was removed on May 7th, and it measured ¾ inch in length, ⅜ inch in width, and ¼ inch in thickness. The operation was done with such precautions as I uniformly employ, the nose being thoroughly syringed with saleratus water, the parts anesthetized with 20 per cent cocain in 2 per cent carbolic acid, the saw dipped in 95 per cent carbolic acid, and the nose packed for 24 hours with sterile gauze.

The condition of the eyes on May 3d, in connection with the fields taken on that and previous days, while not greatly changed, led me to administer daily 60 grains sodium salicylate, and alterative and tonic doses of calomel and strychnia. On May 9th the eye was still slightly congested, but the patient informed me that the feeling of heat and pain on moving the eye or jarring the head, had disappeared. On May 13th the eye was white and quiet. The fields remained much as when first taken, the right contracted from twenty to thirty degrees in the outer half, the left nearly normal. With the refraction corrected vision was R 20-15, L 20-15.

Two days later, and eight days after the nasal operation, a sharp attack of follicular tonsillitis occurred. The nose had received no post-operative treatment, beyond frequent cleansing with hot saleratus water, in the hospital ward. In addition to appropriate general treatment, the nurse was requested to spray the nose with hydrogen peroxide. Instead of spraying the nares as directed, the nurse used a syringe, with the result that a sharp pain was felt immediately in the back of the head, which continued for some days, with a profuse discharge of pus following. Examination revealed a flow of pus from the region of the opening into the sphenoid sinus of the left side. The large exostosis which had been present on that side, had apparently prevented the downward development of the corresponding middle turbinal to such an extent that the ostium was found to be easily reached with a slightly bent probe. The nares were frequently washed with saleratus water; and as the discharge continued rather profuse, on May 27th I introduced the tip of a small Eustachian catheter, and freely washed out the sinus, removing quite a little pus, with a decided lessening in the amount of discharge. The washing was repeated on the 29th and 31st, and on the 10th of June the discharge had entirely ceased. The patient returned the following January for a slight change in his glasses. He was otherwise well.

Whether the eye conditions which led to the suspicion of neuritis, were congenital, or whether there had been at some time a mild papillitis as a result of nasal conditions, is to me an unsolved problem.

CLINICAL MICROSCOPY

Ehrlich's Diazo Reaction

There has been much discussion as to the value of this reaction in the diagnosis of typhoid fever. That the reaction is present in all cases has been proven to be untrue. That it is present after the first ten days in most cases, and appears later in a few others, is the general opinion of the profession. The factor which tends to shake one's faith in this test for typhoid fever is its presence in the urine of patients with other infectious diseases.

Pelzl (Wiener Klin Wochenschrift, 1903, No. 31) in a study of the test in 500 patients confirms what has already been demonstrated by other observers. He found the reaction in cases of measles before the eruption and during the beginning stage of the exanthem, in cases of pulmonary tuberculosis, in cases of septicemia, and in cases of scarlet fever.

The Widal reaction and the leucocyte count have done much to do away with this uncertain diagnostic test in typhoid fever, and while many clinicians will continue to use it, we doubt if it furnishes very reliable evidence in differential diagnosis.

A TEST FOR BILE PIGMENTS IN URINE

Rosin's modification of Smith's test for bile pigments in the urine is worthy of more general use by clinicians doing laboratory work. The test is as follows:

Take 5-10 c. c. of urine in a test-tube. Add to the urine 2 c. c. of tincture of iodin which has been diluted with alcohol in the proportion of 1 to 10. The iodin solution should be allowed to run down slowly upon the surface of the urine so as form a layer above. If bile pigments are present a distinct emerald-green ring forms at the juncture of urine and the iodin solution.

The writer can recommend this test for bile pigments, but the iodin solutions must be made up fresh at least once a month.

CHLOROMA

In 1823, Allan Burns first described a malignant disease involving the bones and bone-marrow with metastases in other organs, which was characterized by its green color and to which the name of chloroma was given.

Hichens (Brit. Med. Journal, Dec. 26, 1903) reports such a case in a boy of 4 years, but fails to give the blood-findings.

During the last year a case of chloroma was diagnosed, antemortem, in Neurser's wards at Vienna by the finding of green pigment granules in the leucocytes of the blood. The case was very obscure in its clinical manifestations, and but for the blood-findings would not have been correctly diagnosed. It is, therefore, important that careful blood examinations be made in all such cases coming under observation to determine in what percentage of cases of chloroma these green pigment granules are present in the leucocytes of the circulating blood.

TYPHOID FEVER AND SEPTIC INFECTIONS

Mistakes in diagnosis between these two pathological conditions are constantly being made, and can usually be avoided if the clinician will make a leucocyte count. Uncomplicated typhoid fever causes no rise, but usually a fall in the number of white cells in the blood. Septic infections of all varieties usually produce a pronounced increase in the white cells. When in doubt between these two diseases, this simple procedure is one of the most valuable diagnostic aids which clinical medicine possesses.

Geo. Douglas Head.

NORTHWESTERN LANCET
A SEMIMONTHLY MEDICAL JOURNAL
The Official Organ of the Hennepin County Medical Society
W. A. JONES, M. D..................EDITOR
Editorial Office, 515 Pillsbury Building
W. L. KLEIN, PUBLISHER
SUBSCRIPTION, $2.00 A YEAR.
839-840 Lumber Exchange......................Minneapolis

FEBRUARY 1, 1904

VISIT OF PROF. HEKTOEN

Prof. Ludvig Hektoen, of Chicago, will be the guest of the Pathological Society at its meeting Monday evening, February 15th, at 8 p. m. The Hennepin County Medical Society and the Minneapolis Medical Club have been invited as guests of the Society to attend this meeting, which will be held in the Laboratory of Pathology at the University of Minnesota. Prof. Hektoen has not as yet announced the title of his address, but it is known that the subject will be one of general interest. His reputation as a pathologist of note, as well as the work he is doing in connection with the Memorial Institute for Infectious Diseases, and as editor of the new Journal for Infectious Diseases, makes his visit one of special interest, and makes this opportunity one that should be embraced. A general invitation is extended to out-of-town physicians.

MORE TROUBLE FOR DOCTORS

Every day some new remedy is chronicled by the daily press, not of the patent medicine type, but allied to the more recent scientific suggestions.

Radium with its unknown power of penetration possesses certain curative possibilities which may change the methods of treatment in cases in which the *x* and other rays were originally used. During the short time since radium was discovered its medical or therapeutic qualities have been among the first in the line of experimentation. If the *x*-rays had been employed only from a commercial point of view or for scientific gratification the power of radium would not have been appreciated by the medical world. So far radium has been used in superficial malignant diseases, and with the same success that has followed the employment of the *x*-rays.

Dr. Wm. J. Morton, of New York, has used certain dilute fluorescent fluids in the intestinal tract, and, by the external application of a radium-tube, has illuminated the liquid and rendered visible the cavities of the body. Incidentally the illuminating fluid is employed in malignant growths in the interior of the body, and beneficial results are expected that will overshadow the success of the other rays. The records so far give the radium greater activity, and hence more rapid curative properties, than any other light that has the subject of experiment.

There is less danger that radium will be as generally employed on account of its scarcity and prohibitive expense. The charlatan may claim its possession by unfair means, but the public have been clearly informed that only an infinitesimal portion of radium exists at the present time, and is not available for commercial or therapeutic purposes.

If the experiments of the New York men in illuminable fluids is at all accurate, Dr. Turck's new instrument for exploring the stomach and intestines will be of greater service. The apparatus consists of lenses scientifically adjusted, and applied as the enteroscope was used. The new instrument is more accurate in its adjustment and wider in its application. If all these newer methods fulfill the expectations of the experimenters, the graduate of 1910 will be so far in advance of the present day practitioners that we shall groan over our wasted years of study and work. With lights, reflectors, and photographic outfits diseases will be diagnosed, treated, and recorded with surpassing swiftness. The old-fashioned doctor will be obliged to labor among those who are unable to avail themselves of newer methods, or who are in ignorance of its wonders, just as we do to-day, but under more stable and less varying circumstances.

An unknown man in England has recently advanced the idea that people of to-day might live to be hundreds of years old, if they would keep their skin in a sufficiently active state, and he suggests that the feet particularly, and other parts of the body as well, be bathed with glacial acetic acid. The inventor of this protracted life-giving agent was not able to produce his multicentigenarian, but thought it could be done in a couple of hundred years.

What romantic ideas are developed in the days of prosperity, commercial upheavals, wars, storms and unusual losses of life! There must be an atmospheric influence that is in a measure responsible for these advances. The brain of man is developing at such rapid strides that a general feeling of tension prevails.

What we need more than all of these wonders and exciting cure-alls, is a gospel of relaxation that will counteract the ever-present stimulant that urges men on to premature decay and inevitable destruction.

Turn down some of the lights until the world can catch up its lost sleep, and repair its nerve energies!

HOSPITAL MANAGEMENT

The resignation of Dr. Arthur Ancker after twenty years' service as superintendent and physician of the St. Paul City Hospital is a matter for congratulation and regret. Dr. Ancker has been made superintendent of a large hospital in Chicago at an increased salary, hence is to be congratulated. That he has removed from St. Paul and the state is a matter of regret.

Dr. Ancker filled the position he is about to leave for many years in a highly acceptable manner. The fruits of his administration are represented by the City Hospital, its buildings and equipment, and its domestic administration.

A hospital that is a recognized success should have a trained medical man or superintendent at its head, particularly if the institution is a large one. The staff, whether large or small, must have upon it a representative, resident of the hospital with which they are connected. The one aim and object of a hospital is the care and treatment of the sick from a medical standpoint. The hospital should be free from any influences which tend to impair or hinder its scientific medical objects. Physicians know best the needs of an institution for the sick, and the comfort and care of the patient must be under the direction of the doctor. The domestic and financial administration may safely be left in the hands of a board of directors who shall consult the superintendent on matters of policy. A hospital that expects to exist on a sound basis, and pays expenses, should be under but one head, a medical superintendent or one trained for that purpose. The responsibility at the institution should be vested in its superintendent, who reports to the board of directors. Any attempt to subdivide responsibility or management will result in conflict and failure. Dissatisfaction is ever present, but its numbers are usually in the minority. A trained superintendent will not escape criticism, but, on the whole, his administration will be for the best good of the hospital regardless of petty personalities. He must have a forceful personality, and a fixed purpose. He must be a rigid disciplinarian, in order to command respect from employees and physicians. He must be competent in his inspection, and maintain an orderly house; and above all he must be educated in medical matters, in order that he may appreciate the needs of the patient and doctor.

A hospital that has an efficient superintendent at its head never lacks patients, and numbers insure a satisfactory income.

Since the above was written we understand that Dr. Ancker will remain in St. Paul with the City Hospital.

A NEW DEPARTMENT—CLINICAL MICROSCOPY

When The Lancet decided to start "The Hospital Bulletin," it was only after much deliberation, and with a full comprehension of the dangers of the "department store" business. We cannot but feel, however, that the time has come when the minor medical journal must make a new field for itself. The day of the deadly dull, bookish article, or paper, has gone by, and something readable, practical, and helpful is demanded.

Of course a mere "department" will not furnish the readable, the practical, and the helpful; but it may enable the editor the better to convey to his contributors what he wants, and to his readers what they may expect when the journal comes to hand. And so the department of "The Hospital Bulletin," which we might properly have called "bedside information," suggested itself. The medical college that can give its students the most of this kind of work, other things being fairly equal, is the best college. A year or two at the bedside in the hospital after graduation is now considered quite indispensable to the young practitioner, and with this work he goes into the field, and despite the handicap of a beardless face, he gives us old-timers a scare, not only because he gets our patients, but because he gets some of them that we have given up to die, and he immediately cures them. And this is advertising that no code of ethics can stop, and no sugar-coating can make palatable to the old-timer. The remedy is apparent. The old-timer must keep up with the times.

But we are wandering, and must come back to our "store." Our bedside work having been done, the march of progress carries us into the laboratory, there to learn microscopically what cannot be learned macroscopically at the bedside; and so THE LANCET proposes to give its readers in a new department, to be called "Clinical Microscopy," all the microscope reveals in diagnosis. We are fortunate in having in our midst some of the best microscopists in the country, and we hope they will show our readers, not only what the new science of the laboratory is doing for medicine, but what every physician may do for his patients with an equipment that is within the reach, as to cost, of every practitioner, and is also within his possible reach as to knowledge. Dr. George Douglas Head opens the department in this issue with some of the comparatively new work being done at home and abroad; and we hope to have much more from him, and from the other specialists in this line of work. We are sure we cannot commend this department too highly to our readers, both because of the inherent importance of the subject, and because we are confident much valuable and practical matter will be found in the department.

AN URGENT INVITATION

We repeat our invitation to all hospitals and practitioners to contribute to The Hospital Bulletin Department; and let us extend it to the journal as a whole, especially the news column.

REPORTS OF SOCIETIES

THE MINNESOTA ACADEMY OF MEDICINE

ATHUR W. DUNNING, M. D., SECRETARY.

The regular meeting of the Academy occurred on Wednesday evening, January 6, 1904, at the West Hotel, Minneapolis. The president, Dr. Wm. Davis, of St. Paul, was in the chair, and thirty-two members were present.

Dr. Alex. R. Colvin of St. Paul was elected to active membership.

Dr. S. Marx White of the University of Minnesota presented his inaugural thesis, entitled "A Case of Ulcerative Angina with the Fusiform Bacillus and Spirillum of Vincent in the Exudate." Then followed a discussion at considerable length by Drs. Wesbrook, Schwyzer, and Nippert, and by Dr. White in closing.

The following is an abstract of Dr. White's paper:

The organisms to be described were described in 1896 by Vincent who found them in the exudate in a number of cases of hospital gangrene. Bernheim described similar organisms in connection with thirty cases of angina and stomatitis, in 1897. Some seventy articles on the subject have appeared, only a very few, however, in this country, the first being that by Mayer, in 1902. The characteristics of the organisms are briefly as follows: They are usually present in combination, the bacillus rarely alone. The fusiform bacillus has swollen centre and pointed extremities, and is 6 to 12 microns in length; decolorizes, but somewhat irregularly, by Gram's method. Vacuoles may be present, but no spores. The spirilla are two or three times the length of the bacilli, and occur singly or in tangled groups, are motile, and decolorize by Gram's method.

The organisms have not yet been cultivated in pure culture, and on inoculation into laboratory animals fail to cause disease.

CASE.—F. T. B——, male, age 22; tonsils always somewhat enlarged since 18 years of age, with frequent tonsillitis. After the last attack in May of this year, tonsil remained deeply fissured. Present illness began Oct. 10, 1903, with symptoms of tonsillitis. Exudate appeared Oct. 14th; temperature 101°, with general febrile symptoms. October 15 a diagnosis of probable diphtheria was made by a competent physician. Patient first seen by author Oct. 16th. Lymph-glands in right side of neck and beneath angle of jaw, greatly swollen and tender. Right tonsil swollen and ulcerated, the surface covered with a thick grayish-white exudate, which was soft and smooth on the surface, but granular and crumbling beneath. The exudate is readily removed by a swab, the underlying surface showing red and angry beneath, and bleeding when touched.

TREATMENT.—Lithium salicylate, ʒii per day for 3 days, and a 0.5 per cent aqueous solution of formalin, to be gargled.

Oct. 27th exudate nearly gone from tonsil.

On Oct. 16th smears on cover-slips showed the typical bacilli and spirilla in great numbers. Cultures in 1 per cent and 5 per cent acetic acid broth and in Dunham's peptone solution showed growth of the organisms. Other cultures showed no growth. Inoculation of a rabbit and a guinea-pig gave negative results. In differentiating this condition from other diseases of the region direct smears from the exudate should be made on cover-slips and stained with methylene-blue or fuchsin.

(A photograph of the throat, and a micro-photograph of the organisms, were shown.)

DISCUSSION OF DR. WHITE'S PAPER

Dr. Wesbrook said that he had seen not only the specimens but also the case clinically. It is very desirable that proper diagnosis of this class of cases be made. In depending upon the culture test one may overlook the etiological factor in diphtheria. This bacillus would not grow on the media used in the culture test for diphtheria, therefore it is better to examine a smear of the original product from the throat, as well as the culture product.

Dr. A. Schwyzer asked the essayist what the macroscopic appearance was—whether a thin film over the part or a cheesy, thick mass.

Dr. Nippert thought he might have seen cases of this kind, and failed to recognize them. He asked whether the palate may become covered by the exudate as in diphtheria, or whether it was confined to the tonsil. He stated that he gave up long ago the diagnosing of diphtheria by the bleeding surface revealed by removal of the membrane, for he has seen cases of non-diphtheritic throat where this has been the case.

Dr. White said, in closing, that there is one thing we must bear in mind, and that is that we know so little about this form of infection. He believes it is not uncommon and that its existence explains many cases which look so much like diphtheria, and which yet give negative results to the diphtheria test. He thinks he has known of three or four cases within a year.

In answer to Dr. Schwyzer's second question, he said it is not a thin film, but a soft granular mass, easily broken up, the swab sinking easily down to the ulcerative surface, and bleeding is easily produced.

In answer to Dr. Nippert's question he stated that it does attack the palate, and one case has been reported in which the uvula was covered as in diphtheria.

Dr. James E. Moore then read a paper on "The Complications and Sequels of Prostatectomy." The subject was discussed by Drs. Dunsmoor, Courtney, Abbott, Schwyzer, H. P. Ritchie, and by Dr. Moore in closing.

The following is an abstract of Dr. Moore's paper:

Dr. Moore stated that it was altogether too grave an operation to be resorted to as a routine treatment for enlarged prostate, and was only applicable to properly selected cases. The most frequent cause of death following this operation was uremia, consequently the most important preliminary examinations were those of the kidneys. The next greatest danger was sepsis, and in the presence of an infected bladder it was an ever-present one.

The most positive indication for operation was very often a complicating cystitis, and it was for the relief of this complication that the various palliative measures were most frequently employed. The only satisfactory treatment for this complication was drainage, and this was best brought about by perineal prostatectomy. Stone was a frequent complication of enlarged prostate, and should always be sought for and removed during the operation. The incision for a prostatectomy, when too extensive, caused vaious complications. Hemorrhage was an occasional complication, but its dangers had doubtless been overestimated. A serious objection to the suprapubic operation was the extensive injury done to the bladder; while the most difficult problem connected with the perineal operation was how to avoid injury to the rectum.

As sequelæ of prostatectomy, he mentioned impotence and incontinence or dribbling. A communication between the urethra and the rectum was one of the sequelæ met with occasionally. Epididymitis often followed prostatectomy, sometimes becoming so troublesome as to require the removal of the epididymis.

The author believed some failures were bound to follow this important operation, but that it was destined to be one of the greatest boons modern surgery had to offer suffering mankind.

DISCUSSION OF DR. MOORE'S PAPER

Dr. F. A. Dunsmoor agreed in the most part with the views expressed by the writer. He thinks that the more one operates in one direction the smaller becomes his incision. The question of saving the seminal vesicles is a very important one.

Men who have undergone this operation have told him that they had completely lost the power of erection, and this raises the serious question as to whether to operate on men of middle life. The operation simply to relieve the outflow of urine may be made without removing the gland. He spoke also of the plan of simply splitting the capsule of the prostate. Those who have not tried the operation should beware of sutures penetrating the bladder-wall because of the phosphatic cystitis which is likely to follow.

Dr. Walter Courtney spoke of a case in which the patient had severe hemorrhage, and he used a strong solution of antipyrin to stop it. The hemorrhage was controlled, but the patient had antipyrin poisoning because the solution was stronger than intended.

Dr. A. W. Abbott expressed a loss of all confidence in urotropin. After giving it a very painstaking trial under close observation and tests of the urine he concluded that it is inert as a urinary antiseptic, and he has gone back to the good old benzoate of ammonium. He was also of the opinion that old men have far less power of endurance of operative proceedure than younger men, and great caution should be observed in operating upon men far advanced in years. A point which should be born in mind with these old men is that they should be turned on their side as soon as possible after operating.

Dr. A. Schwyzer stated that he had operated four times with perfect success, but that his fifth and last case had died. He made his first operation with a small incision, but the later ones had been larger. The fatal case was a large fleshy man who had a rapidly enlarging gland, which was found on removal to have softened also. He had some hemorrhage, and diarrhea followed; and death was probably due to all these elements together.

Dr. H. P. Ritchie said he had operated upon one case himself, and had the care of ten cases. The early cases were suprapubic operation, but the latter cases were perineal. There was no serious trouble from hemorrhage in the perineal operation, but there was in the suprapubic. The hemorrhage was due to laceration of the bladder-wall. He mentioned the use of the Edebohl speculum as a very satisfactory means of bringing the field of operation into view.

Dr. J. W. Little expressed the belief that the operation is one of the best, and yet it is one in which great judgment should be exercised in the selection of proper cases for operation. Residual urine should be carefully looked after. A catheter may be left in place for a few days for complete drainage, and urotropin administered. He thinks that surgeons should hesitate to operate on men under fifty years of age because of the danger of destroying sexual life. Young's method of trying to save the seminal vesicles he thinks ineffectual. The position with the thighs flexed strongly on the abdomen he has found most satisfactory.

Dr. Wilcox, a guest of the Academy, stated that he had seen by association all the complications the writer mentioned, and performed autopsies on two cases. He believes gangrene is often due to a large area of pressure of instruments during operation.

Dr. J. E. Moore, in closing, said the object of operating is not to remove the gland, but the diseased portion of it. The old man is entitled to all that surgery can do for him. He does not agree with Dr. Abbott as to the use of urotropin, but believes that 7 to 10 gr. doses are a great help.

HENNEPIN COUNTY MEDICAL SOCIETY

F. A. Knights, M. D., Secretary

The annual meeting of the Hennepin County Medical Society was held January 4th, Dr. J. W. Bell, president, in the chair and one hundred and thirty-two members in attendance.

Dr. Nippert for the Milk Commission reported that on the farm of C. M. Loring preparations were under way to provide a dairy to conform to the requirements for certified milk. Application for membership was made by Dr. Wm. David Bloom, 23 Syndicate Block, Hamline, '01; Dr. C. J. Wright, Fifteenth and Hennepin, Johns Hopkins, '02; Dr. Gilbert Seashore, Adams and Broadway streets, U. of Minn., '02, and Dr. W. P. Polk, Medical Block, U. of Penn., '81. All referred to the Censors.

The Censors reported favorably upon the names of Dr. Olof A. Olson, Dr. Wm. M. Chowning, Dr. Van H. Wilcox, Dr. E. K. Green, Dr. E. H. Beckman, Dr. W. D. Sheldon, and Dr. Wm. J. De la Barre, and they were duly elected to membership.

The report of the treasurer for the period beginning Sept. 1, '02, and ending Dec. 31, '03, was read, showing the society free from debt and with $234.29 in the treasury.

Dr. S. M. White extended to the Society an invitation from the Pathological Society to attend a meeting at which a paper is to be read by Dr. Ludvig Hektoen of Chicago, Monday, February 15th.

The amendment to by-law No. 2, notice of which was given the previous month, was then taken up, and on motion the by-law was amended to read as follows:

"Any active member who is in default of payment of his annual dues and assessments for a year, and who has received two notices of such indebtedness, shall be considered under suspension of membership, and shall neither be entitled to vote nor elligible to office.

"If such default continues for two years his name shall be dropped from the roll of membership, after final notice of delinquency, and shall be reinstated only upon application in the manner prescribed for new members, and upon full payment of dues and assessments to the date of such dismissal, and upon affirmative vote of four-fifths of the members present at any stated meeting.

"This by-law shall be printed upon notices of dues issued by the secretary-treasurer."

Dr. J. W. Bell then delivered the president's address, the subject being "Myocarditis."

The Society then proceeded to ballot for officers for 1904, and the following officers were declared elected:

President, Dr. C. H. Hunter; vice-president, Dr. W. E. Rochford; librarian, Dr. Geo. D. Head; executive committee, Dr. J. W. Bell, Dr. L. A. Nippert, Dr. G. G. Eitel; board of Censors, Dr. R. J. Hill, Dr. C. J. Ringnell, Dr. D. O. Thomas, Dr. O. S. Chapman, Dr. J. D. Simpson; delegates to State Association, Dr. A. W. Abbott, Dr. F. A. Dunsmoor, Dr. G. G. Eitel, Dr. D. O. Thomas; trustees, Dr. H. H. Kimball, Dr. E. Phillips, Dr. W. A. Hall, Dr. R. J. Hill.

On motion of Dr. Frank Todd, seconded by Dr. A. E. Benjamin, the election of Dr. Hunter for president was declared unanimous.

After short speeches by the outgoing and incoming presidents the Society adjourned.

NERVOUSNESS IN CITY CHILDREN

There is in the bringing up of children the one opportunity for the present day physician to assume the important rôle of domestic confident and adviser so long and so satisfactorily held by the old-time family physician. For the sake of the rising generation there is here a place to be filled that must not be neglected, or it will prove a costly oversight.—Editorial in Archives of Pediatrics.

NEWS ITEMS

Dr. A. J. Tictin, of Maynard, has moved to Clara City.

Dr. E. A. French has moved from Ortonville to Breckenridge.

Dr. A. E. De Camp, of Spencer, S. D., has moved to Gettysburg in that state.

Dr. Theodore Bradtrud, of Warren, has returned from a year's study in Vienna.

Dr. F. M. Prettyman, of Bemidji, has located at Mallard, one of the brand-new villages of the state.

Dr. Cloud Barrett, of Granville, N. D., was married last month to Miss Isa Allen, of Britt, Iowa.

Dr. G. B. Weiser, of New Ulm, has been reappointed a member of the State Sanatorium Board.

Dr. J. M. Halliday, of Reynolds, N. D., is on the sick list, having been operated upon for appendicitis.

Dr. O. J. Brown, who recently moved from St. Cloud to Fergus Falls, has decided to locate at Little Falls.

Dr. Brown, of Farley, was reported dangerously ill a couple of weeks ago. He was taken to St. Anthony's Hospital at Bemidji.

Dr. Henry Wiedow, of Round Lake, has moved to Worthington. Dr. Wiedow is a graduate of the Iowa State University, class of '02.

Hutchinson has a Citizen's Improvement Society which proposes that Hutchinson shall have a hospital, and the matter has been referred to a committee.

Dr. H. B. Godfrey, who graduated from the State University in June, and has since been practicing at Black Duck, died in Minneapolis last month.

Virgil, S. D., wants a doctor, a banker, a stock-buyer, and a hotel-keeper. It is not announced how many men are wanted for the four jobs—one or four.

Dr. T. O. Sando, of Drake, N. D., is in charge of the practice of Dr. Pence, of Balfour, during the latter's absence, Dr. Sando does not expect to return to Drake.

It is announced that in the spring the Minnesota State Board of Control will erect a kitchen and some temporary building for the State Sanatorium on the sight near Walker, which was selected last summer.

Dr. A. B. Ancker, superintendent of the St. Paul City Hospital, has decided to remain in that position, and has finally refused to accept the position of superintendent of the Presbyterian Hospital of Chicago.

A physician is wanted in Backoo, N. D. Four or five adjoining towns have no physician, and Backoo itself is said to be a promising place. Either Fred Bearsto, elevator man, or J. Trepanier, merchant, will give information upon the subject.

The Black Hills Medical Society held its annual meeting last month at Lead, S. D., and elected the following officers for 1904: President, Dr. A. H. Bowman, Deadwood; Dr. C. W. Hargens, Hot Springs, vice-president; A. G. Allen, Deadwood, secretary; F. S. Howe, Deadwood, treasurer.

The Upper Mississippi Valley Medical Association met last month in Little Falls, with a good attendance. The following were elected officers for 1904: President, Dr. J. J. McKinnon, Wadena; vice president, Dr. J. G. Millspaugh, Little Falls; secretary, Dr. J. A. Thabes, Brainerd; treasurer, Dr. O. T. Batcheller, Brainerd.

The following changes were recently made in the faculty of the Medical Department of the State University: Dr. Frank C. Todd, formerly clinical professor, becomes professor of Ophthalmology and Otology, filling the chair made vacant by the resignation of Dr. J. F. Fulton. Dr. J. E. Schadle becomes clinical professor of Rhinology, Laryngology, and Otology. Dr. Andrew Henderson becomes clinical professor of Medicine.

The supreme court of Minnesota has made a new ruling in expert medical testimony, setting aside the decision of the lower court which refused to admit the testimony of an electrician. The court holds that "a physician who applies the *x*-ray, not for medical purposes, but to locate a foreign substance in the body of his patient, is not entitled to have the question of his care and skill in applying it determined by the opinions of physicians of his own school."

The McLeod County Medical Society met last month at Glencoe. The attendance was large, and the papers presented were listened to with much interest. The following officers were elected for the current year: President, Dr. D. W. Bolles, Brownton; vice-president, Dr. P. E. Sheppard, Hutchinson; secretary and treasurer, Dr. P. E. James, Hutchinson; executive and legislative committee, Dr. J. H. Dorsey, Dr. Frederick Sheppard and Dr. John Clements.

The following physicians received, at the examination last month, licenses to practice in North Dakota: W. P. Baldwin, Casselton; C. K. Ritchie, Velva; J. S. Davies, Granville; Geo. C. Hansen, Climax, Minn; K. Gryttenholm, Zumbiota, Minn.; C. M. Niles, Cathay; O. C. Bean, Palmero; Paul H. Burton, Fargo; Clinton Smith, Devils Lake; O. Sand, Pelican Rapids, Minn.; E. Bibby, Chaffee; John G. Warren, St. John; R. W. Meadows, Oberon; Stephen Fisher, I. R. Maercklin; W. R. Claybough, Only two failed to pass.

The new hospital building at Edgerley, N. D., is now completed except the plumbing, and the number of patients admitted before the building was completed shows how great was the demand for such an institution. The Edgerley hospital is said to be a model. The building is 28x60, two stories high, with a large basement room, which contains the reception-room, the offices, massage, bath, electrical, and other rooms. On the first floor are twelve private rooms, and on the second floor are the operating-room, a large ward for women and children, and a smaller ward for men. The hospital is under the supervision of Dr. H. W. Barbour, who has the following associates: Drs. Martin and Boyd, of La Moure; Drs. Benn and Brenckle, of Culm; Dr. Bowen, of Monango; and Dr. Stephenson, of Ellendale.

SANATORIUM FOR SALE

Owing to the death of Dr. Sam C. Johnson, the Sanatorium at Hudson, Wis., is for sale by the administrator of Dr. Johnson's estate. The property is beautifully located on the bank of Lake Mallilieu, and is within the city limits. The building is steam-heated, electric-lighted, and supplied with modern appliances and apparatus. It has been very successful for a numnumber of years, and will return a large interest on the money invested. Its location is so near the Twin Cities, and so far from a like institution, it need never lack for patients. It can be bought for a very low price, and to a satisfactory purchaser, reasonable terms will be given. For further information, address or call upon

Wm. H. Phipps, Special Administrator.

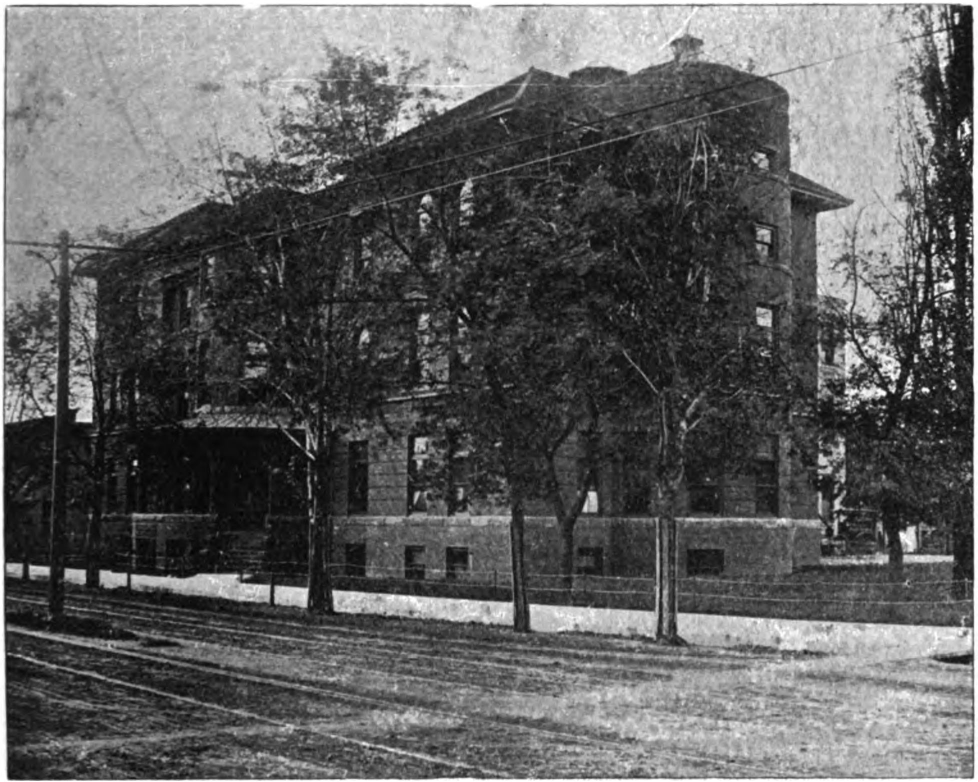
PHYSICIANS LICENSED AT THE JANUARY (1904) EXAMINATION TO PRACTICE IN MINNESOTA

We publish this list in this form at the request of the State Board of Medical Examiners, in order that the names may be pasted in the Official Register, copies of which are sent free by the Board to anyone who applies for the same and remits five cents to pay the postage.

Fahey, E. W. (R); Queen's Uni., 1901; Jan. 15, 1904........Rochester, N. Y.
Gag, E. W. (R); P. & S. Chicago, 1903; Jan. 15, 1904............New Ulm
Hagen, H. O. (R); Rush, 1903; Jan. 15, 1904................New Richland
Henninger, L. L. (R); Uni. of Iowa, 1902; Jan. 15, 1904.........Blue Earth
Hilger, J. M. (R); Col. of P. & S., Chicago, 1903; Jan. 15, 1904......Mazeppa
Huffman, R. W. (R); Queen's Uni., 1899; Jan. 15, 1904............Felton
Ilstrup, Orlando (R); Uni. of Minn. 1899; Jan. 15, 1904...............Cokato
Kierland, P. E. (R); Rush, 1902; Jan. 15, 1904..................Rushford
Kling, F. L. (R); Hamlin, 1903; Jan. 15, 1904....................St. Paul
McIntosh, W. A. (R); Trinity Uni., 1900; Jan. 15, 1904..........Deer Creek
McCullogh, George (R); Hamline, 1903; Jan. 15, 1904............St. Paul
Mortensen, Wm. S. (R); Rush, 1903; Jan. 15, 1904........Freewater, Oregon
Moore, L. A. (R); Rush, 1900; Jan. 15, 1904.........................Ely
Mulder, Derk (R); Col. of P. & S., Chicago, 1887; Jan. 15, 1904....Edgerton
Purmort, Jennie G. (H); Boston Uni., 1901; Jan. 15, 1904......Fergus Falls
Rogers, F. D. (H); Uni. of Minn., 1902; Jan. 15, 1904............St. Paul
Sherman, C. L. (R); Barnes, 1900; Jan. 15. 1904............Sioux City, Ia.
Smith, N. M. (H); Hahnemann, Chicago, 1902; Jan. 15, 1904....Minneapolis
Sonck, J. W. (R); Imperial Alexander Uni., Helsingfors, Finland; Jan. 15, 1904.. Hibbing
Shultz, C. S. (R); Uni of Iowa, 1891; Jan. 15, 1904..........Lake Park, Ia.
Swarthout, E. F. (R); Col. of P. & S., Chicago, 1903; Jan. 15, 1904..Goodhue
Thomas, Matilda M. (R); Col. of P. & S., Chicago, 1903; Jan. 15, 1904..Chokio
Tower, J. B. (R); Northwestern, Chicago, 1901; Jan. 15, 1904........Hibbing
Wright, C. B. (R); Johns Hopkins, 1902; Jan. 15, 1904..........Minneapolis

[SUPPLEMENT]

ST. BARNABAS HOSPITAL



FOUNDER

The Late Right Rev. D. B. Knickerbacker

VISITOR EX-OFFICIO

Right Rev. S. C. Edsall

TRUSTEES

Henry Doerr............ 327 Oak Grove St.
Hector Baxter.............420 Guaranty Loan
M. H. Coolidge ....1906 Kenwood
L. R. Robertson ....2615 Clinton Ave.
Rev. C. Edgar Haupt ... 1814 Hawthorn Ave.
Rev. Theo. Payne Thurston, 2015 S. Aldrich
Rev. William Wilkinson .1325 Girard Ave. N.
M. C. Williams ....801 S. E. Seventh St.
Rev. I. P. Johnson 710 E. Fourteenth St.
John I. Black ....1311 Second Ave. S.
A. G. Dunlop............3212 Portland Ave.
Geo. S. Grimes ....4400 Beard Ave. S.

OFFICERS

President ....John I. Black
Secretary ....L. R. Robertson
Treasurer ....Geo. S. Grimes
Chaplain ....Rev. I. P. Johnson
Superintendent ......Miss Lillian M. Staples
Directress of Nurses....Miss Harriet Hartry
Matron ....Mrs. C. M. Foote
Bookkeeper ...Miss Florence M. Stanchfield

MEDICAL AND SURGICAL STAFF

Chief of Staff, C. H. Hunter, M. D.

SURGICAL

Months on duty

Knute Hoegh, M. D., March, April, May.
J. W. Macdonald, M. D., Dec., Jan., Feb.
W. E. Rochford, M. D., Sept., Oct., Nov.
A. E. Benjamin, M. D., June, July, August.

MEDICAL

J. T. Moore, M. D., Sept., Oct., Nov.
C. H. Hunter, M. D., Dec., Jan., Feb.
H. N. McDonald, M. D., March, April, May.
H. L. Staples, M. D., June, July, August.

GYNECOLOGICAL

G. C. Barton, M. D., June-Aug.; Dec.-Feb.
A. E. Benjamin, M. D., Sept.-Nov.; March-May.

GENITO-URINARY

F. R. Wright, M. D.

DERMATOLOGY

M. P. Vander Horck, M. D.

MENTAL AND NERVOUS DISEASES

Leo M. Crafts, M. D.

EYE, EAR, NOSE AND THROAT

Months on duty

C. H. Kohler, M. D., January to June.
F. C. Todd, M. D., June to January.

ELECTROTHERAPY

W. P. Spring, M. D.

PATHOLOGIST

S. Marx White, M. D.

CONSULTING PATHOLOGIST

F. E. Wesbrook, M. D.

WOMAN'S AUXILIARY

Mrs. R. M. Peters........1722 Nicollet Ave.
Mrs. Annie M. Smith.....920 Sixth Ave. S.
Mrs. B. L. Taylor........620 South Fifth St.
Mrs. Mary E. Bucknum..1229 Logan Ave. N.
Mrs. Gilbert Van Etten.....915 Chicago Ave.
Miss Annette Browne...514 E. Fourteenth St.
Mrs. T. W. MacLean......617 Ninth St. S.
Mrs. C. E. Dickinson.......114 Ninth St. S.
Mrs. W. R. Dennison.....915 Chicago Ave.
Miss K. J. Welles.........1731 Hennepin Ave.
Mrs. David Fuller......1523 West Lake St.
Mrs. J. F. Barnard.......3334 Portland Ave.
Mrs. H. E. Bacon.........2429 First Ave. S.
Mrs. A. F. Kenyon.......1329 Harmon Place
Mrs. N. H. Chase......1808 Dupont Ave. S.
Mrs. S. R. Kitchel........128 Highland Ave.
Mrs. L. S. Follett.........1716 Nicollet Ave.
Mrs. James Andrews......502 Fifth St. S. E.
Mrs. Frances E. Holmes, 820 Univ. Ave. S. E.
Mrs. Niles Nyberg......515 S. E. Fifth St.
Mrs. H. M. Lyons......827 S. E. Sixth St.
Miss F. L. Bennett....1227 S. E. Fourth St.
Miss G. H. Thomas..504 E. Twenty-sixth St.
Miss C. L. Boswell...........Imperial Flats
Mrs. S. J. Solverson......2704 Third Ave. S.
Mrs. S. C. Edsall.........2642 Portland Ave.
Mrs. William Wilkinson..1325 Girard Ave. N.
Mrs. H. W. Bester......2826 Third Ave. S.
Mrs. M. Walton...........2523 Stevens Ave.
Mrs. A. A. Pew........ .315 E. Fourteenth St.
Mrs. L. Michaels........801 Franklin Ave. E.

COMMITTEES

WAYS AND MEANS

Mrs. David Fuller, Chairman
Miss F. L. Bennett, Mrs. T. W. McLean,
Mrs. E. C. Gairrgues, Mrs. S. C. Edsall.
Mrs. C. F. Poehler,

RELIEF

Mrs. A. M. Smith, Mrs. H. Lyons,
Mrs. F. E. Holmes, Mrs. A. F. Kenyon,
Mrs. L. S. Follett, Miss C. L. Boswell.

FREE BED

Mrs. N. Nyberg, Mrs. M. E. Bucknum,
Mrs. B. L. Taylor.

ENTERTAINMENT

Mrs. N. H. Chase, Mrs. R. S. Kitchel,
Mrs. H. E. Bacon, Mrs. H. W. Bester,
Mrs. L. Michaels, Miss C. L. Boswell.

TRAINING SCHOOL

Mrs. Gilbert Van Etten Mrs. Wm. Wilkinson,
Mrs. A. A. Pew, Mrs. M. Walton,
Mrs. A. Solverson.

NURSES' HOME

Miss K. J. Welles, Mrs. N. H. Chase,
Mrs. A. M. Smith.

HISTORICAL SKETCH OF ST. BARNABAS HOSPITAL

[The following sketch is compiled and condensed from an address delivered by Hon. Isaac Atwater, the first president of the Board of Trustees of the hospital, on the twenty-fifth anniversary of its institution.]

INCEPTION

There is an order in the city of New York called the "Order of the Divine Compassion." How sublime, how all-embracing, the idea of that quality of God which these words represent! And it was an emanation from that divine compassion which inspired and animated the heart of the first Rector of Gethsemane Parish, this city, the late Rev. D. B. Knickerbacker, to engage with earnestness and zeal in this great church work of building a hospital which has now assumed the proportion we here witness.

As the name of the saintly Muhlenberg stood in relation to the great St. Luke's Hospital in New York City, so does his stand in relation to St. Barnabas.

BIRTH

On March 3d, 1871, appeared a notice in the Daily Tribune of this city that a house had been leased at the corner of Washington and Ninth Avenues North, for the reception of hospital patients, a matron and assistants employed, and the benevolent and charitable aid of the public was solicited therefor. This notice was signed by Rev. D. B. Knickerbacker, Judge Beebe, W. H. Chamberlain, Dr. A. E. Ames, O. T. Tuttle, L. R. Robertson, and S. B. Cowdry, members of the Brotherhood of Gethsemane. The building named was a three-story frame, with accommodations for five or six, or, at most, not exceeding ten patients. It was the first building used for that purpose in the city of a professedly charitable nature.

True, it has not reached a position where it can be carried on as pure charity, but it is yearly doing more and more charitable work as its facilities and means are increasing.

GROWTH

The work so commenced in this humble and quiet way, continued in its original location till 1874, when it so happened that a large dwelling house on the bank of the river, known as the Garland house, fell into the hands of Gen. C. C. Washburn. The well-known public spirit and beneficence of the General was sufficient sanction to the Rector to make the modest request that he donate the building for a hospital. The request was granted.

In February of the same year a contract was entered into between General Washburn and the Brotherhood of Gethsemane for the purchase of a lot for the sum of $6,500, to which another lot was afterwards added, completing the present desirable location of about half an acre, at the corner of Sixth Street and Ninth Avenue South. The money to pay for this purchase was raised mostly by subscription, and principally from churchmen.

The building donated was moved on to this site, and with increased accommodations, the work went on under the name of the Cottage Hospital.

STRUGGLES

Patients increased in numbers, but there were sore straits and difficulties to provide for their maintenance. The nearness of the work to the heart of the Rector, however, backed up by his indomitable energy, his popularity and general influence in the community, made him a power for good among all classes. Such means as were at his command he used unceasingly for the hospital, the Brotherhood assisting him in the work.

With the growth of the city, the larger accommodations were still found to be insufficient to meet the demand.

So, though still in debt, a new appeal was made to the charitable people for the erection of another building. It was successful, contributions being received to the amount of over $2,000 and a brick veneered building was erected, greatly adding to the accommodations of the institution. In addition, Hon. H. T. Welles donated $1,300 for the erection of another small building, known as the Welles pavillion.

INCORPORATION

In 1883, when the Rector was elected bishop of Indiana, the hospital was incorporated under the name of St. Barnabas Hospital, the trustees and incorporators being chosen from the various parishes of the city. The incorporators were as follows:

Rev. Thos. B. Wells, Isaac Atwater, William Lochren, Richard Martin, Rev. A. R. Graves, R. W. Jordan, Fred R. Peet, John I. Black, Chas. M. Hardenbergh, Rev. Treadwell Walden, Wm. Saeger, Geo. H. Christian.

By the terms of the articles, it is what is known as a close corporation. While this form is not free from objection, it is believed to be better adapted to efficient and successful work than any other that could be chosen.

Here then, in this corporation, the true, effective and enduring work of the hospital may be said to have commenced. But the resources were not thereby increased, nor were the needs of and labors for it in any wise diminished. Indeed, within a short time, increased accommodations for patients were urgently demanded.

ANOTHER ADDITION

And so the first important work imposed upon the corporation was the erection of a two-story brick building in the rear of the main building, which contained sixteen rooms, with a hall in the center, and a commodious operating room. The funds for this new building were raised by subscriptions, the cost reaching between $7,000 and $8,000.

But this new improvement did not suffice for all future time. The old buildings were rapidly going to decay, and, indeed, were never adapted to the improved and modern methods of medical science. New hospitals were being built by others, with the latest improvements, and in 1892, things had reached a crisis. Expensive repairs must be made on the old, or nearly worthless buildings, or the work entirely abandoned. It is scarcely necessary to say that the latter proposition was not seriously discussed, and a new building was decided upon.

A NEW BUILDING

From Sept. 1st, 1893, to Nov. 1st, 1894, the hospital was closed for the removal of the old buildings and erection of the new. The work involved the demolition and removal of the old buildings (with the exception of the new brick building in the rear of the main building) and the erection of the present large brick structure, three stories in height, and which, it was estimated, would accommodate seventy-five or more patients. The estimated cost was $40,000, or a little over, but ultimately reached nearer $50,000. The money (aside from the mortgage) was realized from that part of the bequest of Richard Martin upon which there were no restrictions placed as to its expenditure, as was the case with that part of the bequest where real estate was bequeathed by him.

On December 30th, 1893, at 3 p. m., the corner-stone of the new building was laid with appropriate religious ceremonies. The work proceeded during the winter of 1893-94, and was completed the following summer. On All Saints' Day, 1894, the new structure was dedicated, and it was a great pleasure to the trustees, as well as to the friends of the hospital, to have the founder of the institution, the late Right Rev. D. B. Knickerbacker, of Indiana, present on this occasion, and to pronounce the benediction of the Church upon this monument of mercy.

The greater advantage secured by the erection of this handsome structure for increased and more successful work is beyond computation, and will be realized more and more as the years go by. The halls and rooms are light and capacious, with high ceilings and a perfect system of fan ventilation. The operating room is a model in the perfection and completeness of its equipment, it being furnished with abundance of light and all modern appliances. In the opinion of prominent medical men, there is not a better appointed operating room in the West than that of St. Barnabas Hospital. The kitchen is on the top floor and in the rear of the structure, so that odors from cooking cannot penetrate to the rooms of patients, and in all its arrangements neatness and convenience are its striking features.

NORTHWESTERN LANCET

A Semimonthly Medical Journal

VOL. XXIV FEBRUARY 15, 1904 No. 4

DISEASES OF THE PROSTATE, WITH ESPECIAL REFERENCE TO HYPERTROPHY OF THE ORGAN*

BY GEORGE G. EITEL, M. D.

MINNEAPOLIS

The prostate gland is a body resembling very much, in size and form, that of a large chestnut. It varies from an inch to an inch and a quarter in length, by from an inch and a quarter to an inch and a half in its transverse diameter. Its apex points downward, and rests against the superior triangular ligament; its base points upwards, and blends with the muscle fibers of the base of the bladder. Its posterior surface is in rather close proximity to the anterior portion of the rectum, about an inch and a half above the sphincter ani, where it may, in most cases, very readily be palpated with the index finger. It has slight longitudinal furrows along its anterior and posterior surfaces, showing an indistinct tendency toward a division into two lateral lobes, although the two halves are structurally continuous with each other.

In some of the lower animals, the prostate consists of two distinct lobes. That portion of the prostate which lies between the ejaculatory ducts of the seminal vesicles and the urethra, is spoken of as the middle lobe. Situated upon the floor of the urethra, just at the entrance to the bladder, it often forms a little prominence which is a continuation of the elevation of the vesicle floor (uvula vesiculæ). The portion of the prostate behind and in front of the urethra connecting the lateral lobes, is known as the anterior and posterior commissures.

The prostate is, in the main, made up of unstriated muscular fibers, connective tissue, and acinous glands. The ducts of these glands coalesce into something like thirty ducts (Fig. 1), which open along the floor of the prostatic ure-

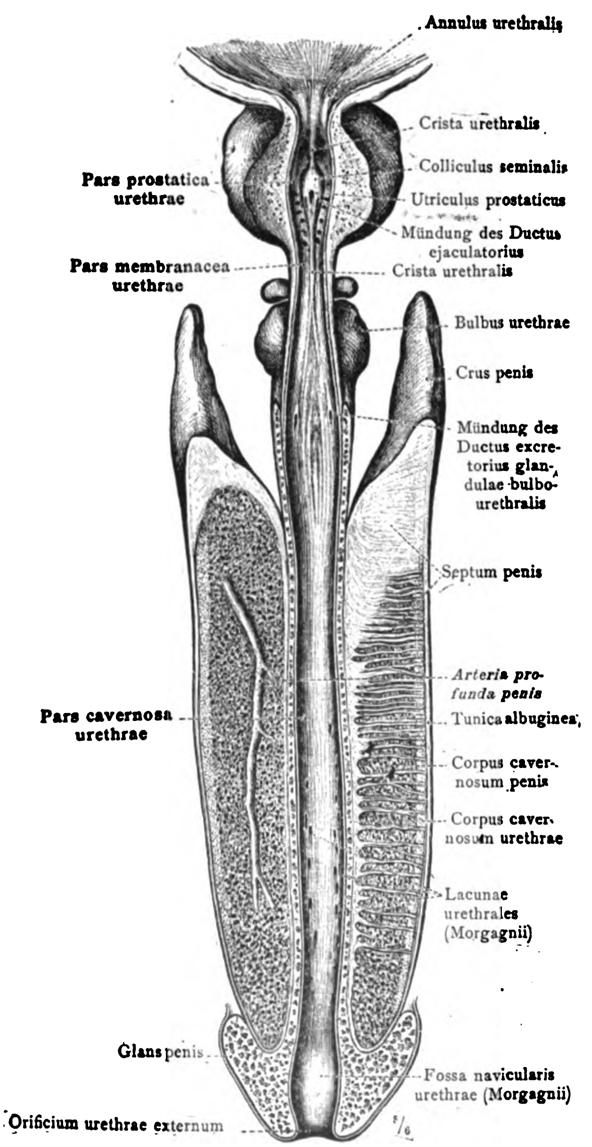


Fig. 1

---

*Read before the Hennepin County Medical Society, December 7, 1903.

thra. Being largely composed of non-striated muscle fibers, it also acts as an involuntary sphincter of the bladder. It is enclosed in a tough fibrous capsule in the outer layer of which are held the blood-vessels.

The prostate is regarded as a sexual organ. It is small during childhood, and remains in a quiescent state up to puberty, when it begins to increase to the size mentioned above, and which it attains at about the twenty-fifth year. The secretion of the glands is said to be especially active during sexual excitement. It is a slightly turbid fluid of feebly alkaline reaction, with specific gravity of 1.010, and is supposed to excite the spermatozoön into activity.

ACUTE PROSTATITIS

An acute inflammation of the prostate gland must, as a general thing, be regarded as due to an infection of pus-producing microörganisms, especially the gonococci, which are very often forced up into the prostatic urethra with a syringe, catheter, or sound. The gland usually becomes uniformly enlarged, and very tender to the touch. There is a sense of weight and uneasiness in the perineum and rectum; urination becomes frequent and painful; and, if the swelling becomes extensive, retention of urine may follow. The pain may become very excruciating, and continue for days, so that the use of opiates may have to be resorted to. There may, or may not, be some rise of temperature. Should suppuration take place, there is usually considerable constitutional disturbance, and a well-marked rise in temperature. The entire process may pass over without the formation of pus. Especially is this true if the infection is one of gonorrheal origin, which, of course, is by far the most common. An abscess may form and point, and break into the urethra, into the rectum, into the ischorectal fossa, into the bladder, and, in very rare instances, into the peritoneal cavity. As soon as suppuration is taking place, it is best to make an incision through the perineum, exercising due care so as not to injure the rectum or cut off the urethra.

TUBERCULOSIS

According to Oppenheim, Collinet, and Krzywicki, the prostate gland was found involved by tuberculosis in 73 per cent of patients who were suffering from tuberculosis of the urogenital tract.

Malignant tumors of the prostate are rarely met with. Belfeld of Chicago says that carcinoma of the prostate occurs as early as 10 years of age. Of course most all malignant growths in the young, say under 30 years, no matter where found, are sarcomata but most malignant growths of the prostate are carcinomata, and they occur after the age of 55 years. Retention cysts of the prostate are now and then encountered. A great deal of interest pertaining to tuberculosis, new growth, cysts, calculi, malformations, etc., of the prostate might be said, but time will not permit, and a mere mention of these conditions must suffice.

HYPERTROPHY

In hypertrophy of the prostate, we find especially three varieties:

1. The general or uniform enlargement (which enlargement extends in all directions alike) as shown in Fig. 2.

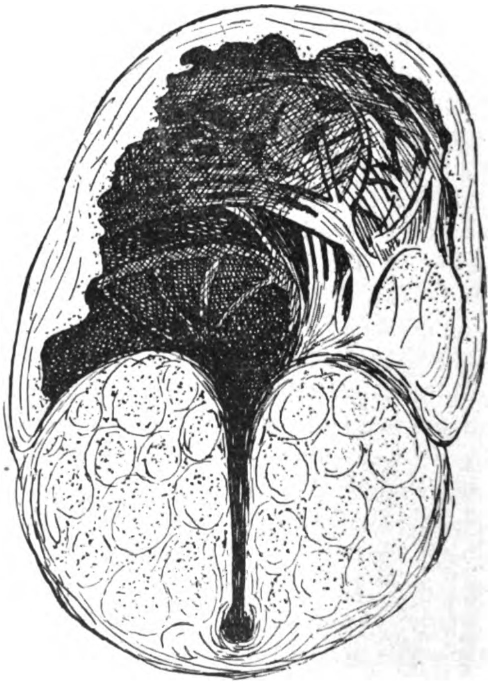


Fig. 2.

2. The general irregular enlargement, in which some segment is increased in size very

much out of proportion to all the rest of the organ, as in Fig. 3.

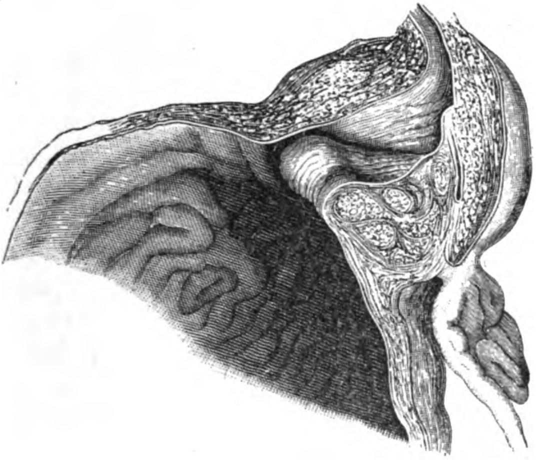


Fig. 3.

3. The bilateral enlargement, in which both lateral lobes are uniformly increased in size, but not materially changing the commissures as in Fig. 4.

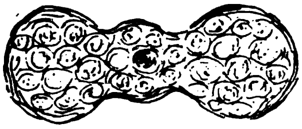


Fig. 4.

These enlargements are, as a rule, chiefly at the expense of the connective-tissue elements, which have encroached upon the glandular structures, and produced pressure atrophy. In this form the prostate is very hard, and on transverse section one finds, in many cases, numerous hard, rather round, circumscribed fibrous tumors, which are generally of whiter color than the tissue in which they are imbedded, and from which they are easily removed (shelled out, same as fibromata from the uterine wall). These tumors vary in size from that of a small pea to that of a large pigeon egg. Should it happen, as it frequently does, that one of these tumors is situated along the median border, it may project into the urethra, or it may become so pedunculated as to enter the bladder, and in some instances act as a ball-valve over the urethral opening, as was found in a case of Dr. Dutton.

There are cases in which the enlargement of the prostate is entirely due to an increase in the glandular elements, in which the hypertrophy is more diffuse, and, instead of a firm hard body, so generally encountered, we have one that is soft and spongy; and on transverse section, we find the tissue uniformly red and granular, with dilated acini. The greater portion of the body in these cases is composed of granular tissue, which is entirely out of proportion to the striated muscular, and the fibro-connective tissue elements. Now and then cases are encountered in which we find a more or less mixture of the two forms, in which are found along side, or imbedded in, the soft granular mass, hard fibromata as above described.

Through the enlargement of the prostate, no matter what form of hypertrophy may have taken place, more or less functional disturbance of the bladder may be the result. A uniform enlargement of the prostate may bulge upwards into the cavity of the bladder so that the urethral opening will be higher than the surrounding bladder-wall, thus producing a dam and preventing the bladder from completely emptying itself. Fig. 5.

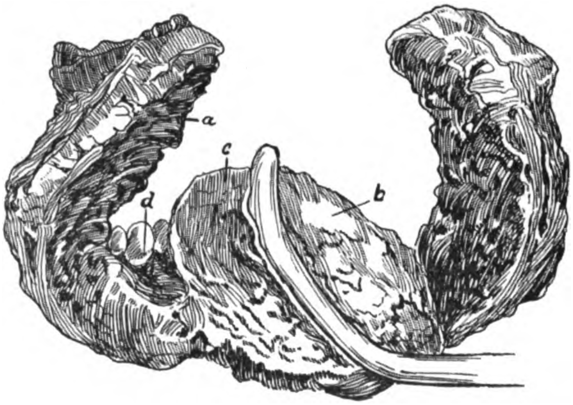


Fig. 5.

Irregular kinks, to even more than a right angle, in the urethra may be the result of hypertrophic changes in the lobes of the prostate, which makes it so difficult in many cases to pass a catheter.

The normal relations at the so-called internal sphincter may be so changed that it is no longer possible for a perfect closure of the bladder outlet to take place and hence the incontinence of urine in cases where the prostate does not necessarily bulge into the bladder, and produce a dam. The dribbling is not necessarily due to overflow. Then there are conditions where the growths so encroach upon the urethra as to produce obstruction, and retention of urine. In this condition we also find a hypertrophied bladder, and may also find dilated ureters and kidneys. The bladder may become hypertrophied and dilated so as to extend up into the abdominal cavity, and on palpation remind one of a unilocular ovarian cyst, or even of a gravid uterus.

SYMPTOMS.—For a number of years before the patient has any idea that there is anything going wrong with his urinary organs, he may notice a lack of force in the stream; and there may be some difficulty in starting the urine, as well as an incomplete stoppage towards the end of micturition. The stream is not sharply cut off, but ends in dribbling.

These symptoms cause no real inconvenience, and therefore are not thought to be of any importance; but as the hypertrophy advances, the necessity of urinating increases, so that the patient is compelled to rise a number of times during the night in order to empty his bladder. Later there may be experienced a sensation of fullness in the rectum and perineum; and there may be pain felt along the entire tract of the urethra, or it may be limited to the neck of the bladder, or to the glans penis. As the encroachment of the urethra progresses, the trouble experienced in emptying the bladder increases, so that it may take some time (several minutes) before the urine is started, and then after considerable effort in straining, the act is completed. The force required, in order to overcome the obstruction due to the pathologic changes in the prostate, produces, up to a certain point, compensatory hypertrophy of the bladder wall. But after a time this fails, and, if not promptly relieved by catheter, more or less dilatation of the bladder, with retention of urine, will follow. The retention may be complete, or incomplete, depending on the hypertrophy of the prostate, and at times also to contributory causes, such as congestion and inflammation. The former is generally due to exposure to cold or some excesses in living, while the latter is generally due to an infection of some kind. Cystitis is seen in some cases, and is supposed to be due to chemical changes that are taking place in the residual urine, and also from infection which may be carried into the bladder by means of a catheter.

TREATMENT.—First of all, the hygienic and medical part of treatment in cases of hypertrophy should be duly considered by the attending physician. Anything that has a tendency to increase the congestion, should be carefully avoided. A chilling of the surface of the body should be guarded against. The patient should wear woolen undergarments of suitable weight, according to the season, and avoid standing or sitting in draughts. The feet should by all means be kept dry and warm. Excesses in eating and drinking, rich and highly seasoned foods, and wines, beer, or liquors of a stimulating nature, should be avoided. The food should be plain, consisting largely of milk and vegetables. Meats should be taken in moderation only, or avoided altogether. Riding horseback and driving over rough roads, has been known to add to the trouble. The bowels should always be kept regular. Sedentary habits should be avoided, or overcome. While it is not best for a person suffering from an enlarged prostate and the accompanying general sclerosi affecting the heart and blood vessels, to indulge in very active physical exercise, it is of considerable importance that the patient should not remain in one position too long at a time. Frequent short walks, either in the house or out of doors, should be indulged in.

There generally exists a strong prejudice against the use of the catheter, not only among patients, but also among medical men. This prejudice operates very greatly against the well-being of the sufferer. As long as the urine can possibly be forced from the bladder, everything is supposed to be well enough. The catheter, as the late Ashurst used to so strongly emphasize, is our sheet-anchor, and its use is indicated as soon as it is discovered that a portion of the urine remains in the bladder; and it should be used as frequently as necessary, be that once, or four or five times in twenty-four hours. The patient of course should be taught how to use the catheter on himself, for many a careful patient can get along for years in this way, and enjoy good health.

SURGERY.—Of course should it be impossible for the patient to properly catheterize himself or if he is socially so situated that he cannot at all times have with him a suitable attendant; or should pathologic conditions of the prostate be of such a nature that palliative measures are attended with difficulty, surgical means should be duly resorted to; and as there are several operations, each of which has its advocates, and as there are, under certain conditions, indications for most of them, I shall only mention them, not entering into the relative merits of each, as time will not permit.

First to be mentioned is suprapubic cystotomy. This operation can be done in cases where the patient's general physical condition is such that a more extensive operation is not advisable. By this I mean simply making an opening into the bladder for drainage. This can be done by first properly using a weak solution of cocain (say, a quarter of one per cent solution) hypodermically. This operation, while it is not an ideal one, can often be done, the patient made quite comfortable, and his life prolonged, or his general health brought into better condition, so that he may be able to stand a more radical operation for the removal of the prostate by either the suprapubic or the perineal route. Should it, however, not be advisable to do any more operating, the patient may be furnished with an apparatus such as designed by my friend Dr. Bloodgood, consisting of a hard-rubber plug, which can be screwed into the suprapubic incision. The plug is perforated, so as to afford a rubber-tube connection with a soft rubber bag, which may be fastened to the patient's thigh.

Suprapubic prostatectomy is a method that has many very enthusiastic advocates among some of the leading surgeons in both Europe and America; and no doubt it is one that, in selected cases, if properly performed, and in many cases that might be even better handled by the perineal route, gives most excellent results. Perineal prostatectomy is, I think, other things being equal, becoming the operation of choice. It is obvious that the prostate can be fully as easily removed by the perineal route as by the suprapubic route, and in doing so, very much less injury to the bladder is produced, as only one opening into the bladder is made, and that in skillful, experienced hands, need not, as a general thing, be a large one. By the suprapubic method, not alone a large opening must of necessity be made above, but also one below, so that there may be an extensive raw surface at the floor of the bladder, which would certainly seem to materially increase the danger of infection. By the perineal operation the best kind of drainage is naturally established, and the patient is far more comfortable and makes a more rapid recovery.

TECHNIC OF THE PERINEAL OPERATION.—Various incisions are made by different operators: the transverse, between the urethra and rectum; the crescent; the inverted "Y," devised by Dr. Murphy, and the median straight. The writer's choice is the median incision, carried carefully up to the urethra and down to the rectum, stretching or drawing the walls of the wound well apart. Through this incision one is generally able to remove the prostate, either by morsellation or in mass. Should this be found impossible in some cases, a lateral incision may be made on whichever side it may seem best. If it is possible to get along without cutting sideways from the original median incision, it is most desirable, as this way the nerve and blood supply is very little disturbed. The next best thing to this is cutting to one side, and thus only destroying one-half of the nerve and blood supply.

Quite an advantage is found in placing a good-sized sound in the urethra, and, firmly held by an assistant, using it as a guide, which aids the operator to avoid injuring the urethra.

After the prostate is removed, and no marked hemorrhage exists, the wound can be closed down to the drainage-tube, which is placed as far back towards the rectum as possible, or should there be more oozing of blood than is desirable, the wound may be packed with iodoform gauze, and no stitching. If the gauze does not hinder the proper drainage of the bladder, it need not be disturbed for four or five days.

The patient should be encouraged to sit up as soon as he feels able, say, on the second or third day. Great care should be taken lest the patient be chilled, and so produce a congestion of the kidneys or a pneumonia. The Bottini, or electro-cautery operation, also has its advocates; and, unsurgical as it may seem, in proper hands and applied in suitable cases, some brilliant results are undoubtedly obtained from it.

PERINEAL PROSTATECTOMY

By J. W. Andrews, M. D.

MANKATO, MINN.

It seems a little strange that an operation having so small a mortality, attended with such good results, and, I may say, so easily performed in the hands of a skillful surgeon, was left for the dawn of the twentieth century to develop. No disease, except it be general paralysis, renders man in his declining years more miserable than does prostatic hypertrophy to a degree necessitating catheter life. A timely and skillful operation will cure 90 per cent of these cases, and the old man's evening sun be made to go down in smiles and bring a quiet and peaceful night.

In 1891 I attended a post-graduate course in the Chicago Polyclinic. At that time Dr. W. T. Belfield was advocating removal of the prostate for prostatic hypertrophy, and had much to say about it as a curative procedure. He seemed to have the theory of the operation well in hand, and to have well-defined ideas of the technic, yet I never knew him to perform the operation, although he may have done so.

In May, 1901, Dr. J. B. Murphy, of Chicago, gave an illustrated talk to the Minnesota Valley Medical Society on perineal prostatectomy. So forcibly and clearly did he present the subject to the physicians of southern Minnesota that it was indeed a revelation to many. He had even at that time had considerable experience with the operation, and spoke as one having authority. It was not long after this that I was consulted by an old gentleman with an enlarged prostate who had already entered upon catheter life, and the technic of the operation had been so graphically described by Dr. Murphy that I did not hesitate to operate. The operation was a complete success. The patient made a beautiful convalesence, and is now enjoying a very comfortable existence. I saw him to-day, and he tells me that he has no trouble holding his water, except at times when he stands around on the cold street too long at a time.

The advice so often given a few years ago to patients in the first stage of appendicitis, by many physicians, viz., "Wait and see how your case develops; if you get bad or worse you can have an operation, if not you will not need one," is now given to patients with enlarged prostates, and who have decomposed residual urine. This is all wrong. I hope to see the time when the physician and the surgeon can better agree as to the time and expediency of operating.

Ten years ago the average old man who had entered upon catheter life was allowed to eke out a miserable existence of three or four years, while the surgeon who with skill and success would enter the abdominal cavity and perform a hysterectomy, a pylorectomy, or a cholecystotomy, would stand by the man with the enlarged prostate and cry "no help." All honor to the few in the profession who have demonstrated that prostatectomy can be successfully performed, and give relief to a degree which obtains but in a few other operations.

The indications for prostatectomy are few, but definite. In a recent article in the Journal of the American Medical Association, entitled "Conservative Perineal Prostatectomy," the writer, Dr. Hugh H. Young, of New York, has the following to say: "The fact that many of the cases requiring prostatectomy are vigorous men in the fifties with sexual powers well preserved, renders it important to do nothing to injure their manly vigor." Permit me to take issue with Dr. Young. The many cases requiring prostatectomy are not vigorous men in the fifties; but very, very few men under sixty years of age require prostatectomy. I grant there are many vigorous men in the fifties that have enlarged prostates, and in consequence of this pass water oftener than in health, possibly they must rise once or twice in the night for this purpose, but there is no dribbling of urine, neither is there residual. Such cases do not require an operation, nor indeed in any case is an enlarged prostate, *per se,* an indication for an operation. A prostate so enlarged that a patient is passing water every hour, or every one-half hour, and is compelled to rise frequently in the night for that purpose, whether there be residual urine or not, or whether a patient has to use a catheter or not, should without unnecessary delay be operated upon. If, in addition to the above, examination reveals the presence of residual, decomposed urine an operation is urgently indicated. If, in addition to the several foregoing indications, the patient has entered upon catheter life the operation is imperatively demanded. To summarize, the indications for prostatectomy may be reduced to three:

1. Enlarged prostate causing frequent micturition.
2. Enlarged prostate causing frequent micturition, plus residual, decomposed urine.
3. Enlarged prostate causing retention of urine to a degree necessitating catheterization.

By frequent micturition I here mean every half or full hour, and patients having to rise five or six times at night. I wish to repeat that a patient having enlarged prostate, and yet not incapacitated thereby to the extent of impairing his general health, interfering with rest at night and regular habits by day, should not be subjected to an operation.

THE OPERATION

No surgeon should undertake any operation without an accurate knowledge of the anatomy of the part or parts he is to operate upon. This is emphatically true of perineal prostatectomy. The anatomy of the male perineum is rather complex, and yet if studied systematically is easily understood.

The skin and superficial and deep layers of the superficial fascia are found here, as elsewhere, on the body, and are of no special surgical interest, except that the deep layer of the superficial fascia is more aponeurotic than in many other places, and joins the superficial layer of the deep perineal fascia, which fascia is better known as the triangular ligament. About two cm. in front of the anus the transversus perinei, the accelerator urinæ, and the erector penis unite in a central tendon. Some fibers of the sphincters and of the levator ani muscles also join this tendon. The deep or posterior layer of the deep perineal fascia is firmly attached each side to the rami of the pubes and ischium, and gives attachment to a portion of the levator ani muscle, and is impinged upon near the pubic arch by the apex of the prostate gland. Between the anterior and posterior layers of the deep perineal fascia is the membraneous portion of the urethra, which is the smallest part of the urethra, and is from one-half to three-fourths of an inch in length. The prostate gland lies in front of the neck of the bladder, its apex touching and adherent to the posterior layer of the triangular ligament, while the base lies upon the neck of the bladder partially between the seminal vesicles and immediately in front of the rectum, being separated from the rectum by a small quantity of connective tissue. The prostatic urethra passes through the gland, and is about an inch and a quarter to one and a half inches in length. On the floor of the prostatic urethra is a longitudinal elevation the veramontanum, and immediately in front of this is a depression extending backward into the veramontanum, which is called the sinus pocularis. Into the sinus pocularis open the ejaculatory ducts, and on either side of the veramontanum a half dozen or more prostatic ducts open into the prostatic urethra. Lying in front of the anterior layer of the triangular ligament and beneath the deep layer of the superficial fascia, and about two and a half cm. in front of the anus is the bulb of the urethra, an important landmark in perineal prostatectomy. The blood supply of the male perineum is derived from the internal pudic and middle hemorrhoidal vessels, and the nerve supply is from the internal pudic, a branch of the lesser sciatic. None of the vessels are very large, except the artery of the bulb, and rarely require more than forcipressure to control the hemorrhage. The transversus perinei, lying upon or directly in front of the muscles of the same name, is probably as large as any that will have to be divided in this operation.

I have gone somewhat into detail in the anatomy of the male perineum, in order that I may be the better enabled to demonstrate to you more clearly the reason for making one central vertical incision, instead of the inverted Y- or U-shaped incision.

I have operated four times for removal of the prostatic gland by the perineal route. In other words, I have performed perineal prostatectomy on the living subject four times. In every case I have made the inverted Y-shaped incision, commencing at the scrotoperineal line in the median line, carrying the stem of the Y downward about three-quarters of an inch, then branching to the right and left, terminating on each side near the tuberosity of the ischium, at a point which would be intersected by a transverse line passing just in front of the anus. All of my cases have been over seventy years of age; the youngest seventy-four, and the oldest seventy-nine. All had entered upon the catheter life; all gave a history of having had residual urine before entering upon that life; all had pus and bacteria in the urine at the time of operation; and all made a good convalesence, and, considering their advanced age, are well to-day. Not one of the four has to rise more than once or twice in a night to pass water, and many nights not at all for this purpose. All have perfect control of the water, and retain it three or four hours during the day. By using the incision above described, the inverted Y-shaped, a flap consisting of skin and the deep tissues and having its base in front of the anus, was allowed to drop back, thus giving ample room to reach the prostate gland and remove it. This I did in every case by splitting the capsule, and dissecting out the lobes by means of my fingers and the Murphy hooks.

I have omitted many little details which have to do with protecting the rectum, the presence of the sound in the urethra, packing the drainage-tube with gauze, and other details which would suggest themselves to any one performing the operation. I have described somewhat in detail the inverted Y-shaped incision, which I used in each case, for the purpose of condemning it, and pointing out the advantages of a straight median incision. In the inverted Y-shaped incision the superficial perineal, the transversus perinei, and the artery of the bulb,—arteries of some size,—are necessarily divided on each side; also the transversus perinei muscles are divided, and the erector penis muscles are more or less traumatized. Thus much of the nutrition is cut off from the flap, and in old men where the circulation at best is feeble, sloughing is likely to take place, making healing by granulation necessary, and thus prolonging convalesence. "The median raphe is the line of safety of the perineum—that part where the blood vessels are the fewest." If a median incision commencing at the scrotoperineal line is carried backward through the central tendon and through the anterior fibres of the external sphincter, it is obvious that this muscle, and the transversus perinei, will retract, widening the incision, and now with good retractors the soft parts can be drawn aside, making practically as large a working-space as that obtained in the inverted Y-shaped incision. By the median incision, then, fewer blood vessels are divided, fewer muscles and nerves, and I believe as easy access to the prostate can be obtained.* Yet, to-day the leading surgeons seem to be divided as to the kind of incision to make in perineal prostatectomy.

While contemplating the preparation of this paper I wrote to five or six of the leading surgeons of the Northwest, asking a few questions. I present to you the answers, thinking they would be of special interest to those who read this article. I received replies from Dr. J. E. Moore and Dr. J. H. Dunn, of Minneapolis, and Dr. M. L. Harris, of Chicago. The following are copies of the letters.

Dear Doctor:—

Ten prostatic operations during the past year: one suprapubic method, one combined, and the balance perineal. Used the inverted Y-incision in all the perineal cases. All the cases recovered and have had control of urination so far.

M. L. Harris.

Dear Doctor:—

Replying to your favor of Sept. 30, I would say that I have made five perineal prostatectomies, with one death, the last one. This case was practically hopeless with or without operation, and I do not think the operation had anything to do with the death. The patient was suffering from severe infection, and had had a temperature of 102° for some time. It was at the patient's own urgent request that I operated. I have used the Y-shaped incision.

I do not think of any other points of special interest. I have made some suprapubic and perineal operations, and have had some very excellent results by that method. However, I am very much more impressed with the perineal operation for most cases. The operation is not very dangerous in proper cases. The worst trouble is that most cases are neglected and go to operation as a last resort.

---

*Since writing the above I have twice operated by central incision, and I think I can verify my favorite impression of it.

You are welcome to these meager facts.

JAMES H. DUNN.

My Dear Doctor:—

In reply to yours of the 29th, I would say that I have felt that my cases of perineal prostatectomy are as yet too few to put on record, because up to two years ago I always did the suprapubic operation. Out of those I have performed I have had but one death, and that was due to uremia. I have used the straight median incision in all of my cases. I prefer it because it gives ample room, as all agree who have tried it, and injures the fewest anatomical structures. I have not used the other larger incisions, but have seen other men employ them, and it has seemed to me in every instance that an unnecessary amount of cutting was done, which made a greater surface for infection, and left more sewing up for the surgeon to do after the work, to say nothing of the injury done to the parts.

J. E. MOORE.

Since writing the above, about three weeks ago, I have performed the operation twice. Both times I have made a single central incision, and found that it gave me ample room. One of these patients (seventy-four years old) had entered upon catheter life. This patient had the largest prostate I had ever seen. It filled the entire lower pelvic cavity. The old gentleman was feeble, with weak heart, and had been confined to his bed for several weeks. He is making a slow convalescence, but I think will recover. The other, aged seventy-two, had not wholly entered upon catheter life, but had to pass urine every half hour to every hour, and had to rise six to eight times every night for this purpose. He is making a beautiful convalescence. We cannot yet know how much benefit these patients will derive from their operations, nor do I feel fully confident that the one so feeble will recover, but, judging from past experience, I look for a favorable result. From the first one of these cases there has been considerable slough from the deep perineal tissues, which is somewhat retarding his convalescence. In both cases I removed the perineal drainage the first week. I hope to report favorably in both of these cases some time in the future.

THE HOSPITAL BULLETIN

ST. BARNABAS HOSPITAL

MINNEAPOLIS

THE DIAGNOSIS OF GALL-STONES.

By J. W. MACDONALD, M. D., F. R. C. S.

C. S——, enjoyed good health until 18 months ago, when he began to have slight attacks of what he supposed to be indigestion. These disturbances began with a feeling of heaviness at the pit of the stomach. The distress gradually increased until it felt as if the stomach were filled with gas, but no gas could be expelled even after taking hot drinks. There was no vomiting or even nausea. From the epigastrium the pains extended on both sides for about six inches and towards the back and both points of the shoulder-blades. At first these attacks could be relieved by the application of hot turpentine fomentations. A year ago the attacks increased in frequency, and occurred two or three times a month until October, 1903; since which time they came about twice a week. The character of the pain remained unchanged but greatly increased in intensity.

I first saw the patient in October, 1903. He was in one of the attacks. The pain was severe and referred to the epigastrium from which it radiated to either side, apparently following the intercostal nerves. There was no tenderness over the gall-bladder, nor suspicion of a tumor. The tenderness over the epigastrium was marked. There was no nausea or vomiting. There was no jaundice. He stated that there never had been jaundice in any of his attacks. One-eighth of a grain of morphine had always been sufficient to relieve the pain. The attacks always began about two or three hours after the evening meal. Three days afterwards I examined him to observe the condition during the interval between attacks. He was free from pain. No tumor could be felt at the position of the gall-bladder, no tenderness at this point or in the epigastrium. An examination of the stomach contents was made, and proved negative. No evidence was gained by an *x*-ray examination.

The position of the pain along the course of the intercostals, the ocurrence at about the same hour each evening, and the total absence of symptoms between attacks made it difficult to decide between intercostal neuralgia and gall-stones. The absence of the characteristic tender points along the nerves and the long-continued and increasing frequency of the attacks led us to a diagnosis of gall-stones.

The patient entered the hospital Jan. 3d, and on the following day was operated upon. Kocher's incision was used. The gall-bladder was small, and its fundus was contracted upon a stone about the size of a filbert. The gall-bladder contained no other stones, and the ducts were free. The edges of the opening in the gall-bladder were stitched to the peritoneum and muscles, and a rubber drainage tube inserted, which was removed on the 7th day.

The diagnosis of gall-stones is best studied by dividing the cases into three classes, according to the position of the stone or stones, which may be lodged in the gall-bladder, the cystic duct, or the common duct:

1. Stone in the gall-bladder.

When we consider that stones are found in the gall-bladder at autopsy in from three to ten per cent of all cadavers, in the great majority of which no symptoms were observed during life, we can readily understand that many cases are overlooked. The presence of stone in the gall-bladder is manifested when it produces irritation by being displaced through violent movements of the body, by contractions of the abdomen wall or by inflammation or increased secretion of the mucous walls of the gall-bladder. The most marked symptoms are produced when the stone rolls into the opening of the cystic duct, and obstructs it. Then the bile gradually distends the sac, and after a time a tumor begins to be apparent. Pain of the character of typical colic occurs. There is tenderness over the gall-bladder itself, and intense pain is felt at the epigastrium, the right hypochondrium, and radiating to the angle and inner margin of the scapula. On palpating the gall-bladder a tenderness is usually felt, and this may persist in the intervals between attacks. There is no jaundice.

2. In the cystic duct.

Vomiting and nausea are nearly always present. The attacks of colic are severe, and reach their height in two or three hours. If the attack stops suddenly we may infer that the stone has fallen back into the gall-bladder. In many cases a tumor may be felt in the position of the gall-bladder, due to distension of the cyst with bile or the presence of large stones. Jaundice is absent except in the rare cases in which the stone occupies the lower portion of the cystic, and presses upon the hepatic duct.

3. In the common duct.

The diagnostic signs here are colic and jaundice. Unless there is co-incident inflammation there is no tumor or tenderness in the position of the gall-bladder. The most severe pain is in the epigastrium or the back. Sometimes change of position relieves the pain. This may be due to a ball-value action of the stone. The jaundice may be remittent or intermittent.

A CASE OF OSTEOMYELITIS AND RESECTION OF THE SHOULDER JOINT, WITH X-RAY PLATE

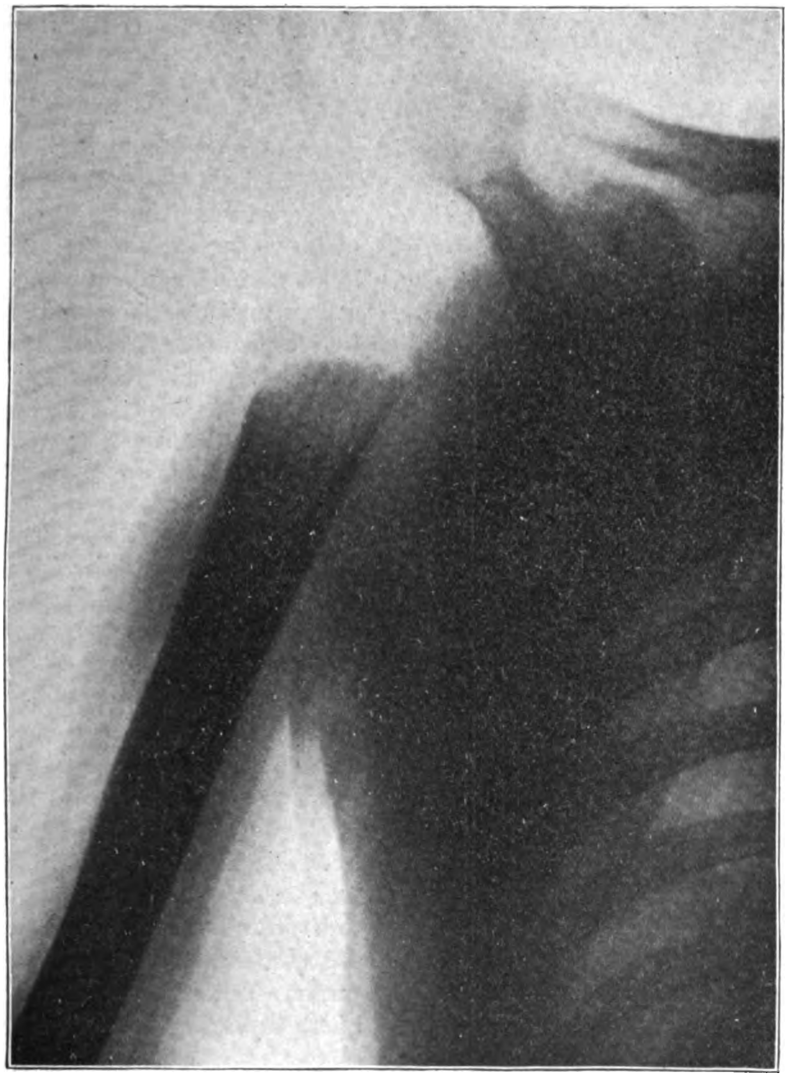
By W. E. Rockford, M. D.

Mr. D——, traveling man, admitted April 20, 1903.

Family History.—Negative, no tuberculosis or cancer in family.

Personal History.—Had a blood-clot on the brain 14 years ago, from which symptoms did not entirely disappear for five years; has been perfectly well from this since. Gave a history of having had symptoms of interstitial nephritis, and at times been troubled with chronic constipation.

Present Illness.—Eighteen months ago sustained a slight sprain to the left shoulder while leading a fractious horse by the halter, which was followed by pain for a few days, and then ceased. Some time in July last, complained of feeling badly, and felt a slight pain in the left shoulder, and two days later had a severe chill, followed by another severe chill the next day. He was then confined to his bed for three or four weeks, under the treatment of his local physician, who thought his illness might be typhoid. The highest temperature being 104°. Fever lasted about 21 days. The pain in the shoulder continued without abatement and increased in severity. There was only slight swelling, if any. Patient was then taken to the hospital and placed in my care.



X-RAY TAKEN ONE MONTH AFTER OPERATION IN DR. W. E. ROCHFORD'S CASE OF OSTEOMYELITIS AND RESECTION OF THE SHOULDER-JOINT.

Examination.—The shoulder-joint was found exceedingly tender, and was now slightly swollen. Patient would not permit of shoulder being moved in any direction on account of the severe pain. Complained of pain most of the time, and could not rest at night without opiates. There was a ridge-like swelling around the shoulder just under the acromion process and above the greater tuberosity of the humerus, marked atrophy of the muscles immediately above and below this ridge, very painful to the touch. Temperature and pulse normal.

DIAGNOSIS.—Most probably an osteomyelitis, though possibly tuberculous or sarcomatous.

OPERATION.—August 27th, a few days after coming to the hospital, the ordinary vertical incision was made over the joint. The tissues surrounding the bicipital ridge and the long tendon of the biceps presented appearances of being tuberculous. The capsule and the head of the humerus were affected. The head of bone and an inch or more of the shaft were resected, and all of the affected tissues removed, care being taken not to injure the long tendon of the biceps. The wound was closed and a piece of iodoform gauze left in for drainage. Healing was completed in three or four weeks without further trouble. The accompanying plate shows the condition of the shoulder a month after the operation.

February 1, 1904, patient has recovered with a fairly good and useful arm.

LABORATORY REPORT

By R. L. Tebbitt

URINALYSIS.—Found few pus cells; no casts or albumin.

BLOOD EXAMINATION.—August 21st, hemoglobin estimate 80 per cent; leucocyte count, 23,600; Widal, negative. August 29th, leucocyte count 18,600. Sept. 21st, leucocyte count 7,600.

Cultures were taken at the operation, but were accidentally destroyed, and the examination was not complete.

Smears were taken, but gave no bacteria.

Sections were made of the capsule and of the bone which showed a round-celled and plasma-celled infiltration and invasion apparently centering around the groove of the bicipital tendon, and traveling up and down the tendon. The bone was porous and spongy, containing a slight amount of turbid exudate extending under the cartilage of the humerus and all but through the cartilage at one point. The process was clearly an osteomyelitis, though the bacteria were not determined, and it was not tubercular.

ST. JOSEPH HOSPITAL

MANKATO, MINN.

A CASE OF CHOLECYSTOTOMY IN A PATIENT 71 YEARS OF AGE, WITH REMOVAL OF FOUR GALL-STONES UNDER SCHLEICH INFILTRATION ANESTHESIA

By Carl J. Holman, M. D.

Mrs. B. H——, aged 71, widow, and the mother of two living children. Passed the menopause at 53 years of age. Six years ago had a large fibroid uterine tumor removed from the abdomen, which is said to have weighed over twelve pounds. She is a stout woman 5 feet 7 inches tall, and weighs 175 pounds; abundant panniculus adiposus. She came under my observation in February, 1901, when she says I told her (after making a physical examination) that she had gall-stone disease. At that time I saw her for an acute exacerbation of her chronic lung trouble. In June, 1903, she had what proved to be her first attack of gall-stone colic. She was taken suddenly with pain in the epigastrium, and vomited and a physician was called who gave remedies for relief of pain. I saw her the next morning, and instituted predigested rectal alimentation with morphin for pain. She was ill a week or ten days, and made a fair recovery. I saw her in September when she was fairly well, but complained more or less of sour stomach, and pain in the region of the gall-bladder, radiating through to the right shoulder. She was instructed as to diet, told to drink freely of water, and put on Carlsbad salts. She had been on sodium phosphate, salicylate of sodium, and the olive-oil treatment without any noticeably beneficial results.

I was called to her home on January 8, 1904, and learned that she had been having more or less distress in the region of the gall-bladder nearly all of the time since I last saw her, and on this morning she had been taken with severe cramps in "the stomach." During the morning she had had several paroxysms of pain; she had been nauseated, and had vomited. The gall-bladder was distended, and readily palpable during the interval between each paroxysm of pain. During the paroxysm of pain the upper right rectus muscle was rigid. She was given ⅜ grain morphin sulphate hypodermatically, which gave relief from pain in a short time. Her daughter asked if her mother could not have the stones removed because she was a chronic invalid in her present condition; and consequently she was brought to St. Joseph's hospital where she was put on predigested rectal alimentation, and food and fluids were withheld from stomach. During the night she was given another ⅛ grain morphin sulphate for pain. The urinalysis Sunday a. m. showed a trace of albumin, acid reaction, no sugar, urea 2 per cent. Microscopic examination showed hyaline and granular casts, quite numerous. Heart, negative; lungs, the seat of chronic bronchitis; liver, quite enlarged; spleen, palpable.

Dr. Hielscher saw her with me and concurred in the diagnosis of gall-stone disease. Taking into consideration the changes we might expect in the heart muscle, the lung, liver and kidneys it was thought best not to use a general anesthetic, and consequently it was decided to attempt to make a cholecystotomy with morphin and Schleich solution anesthesia.

At 8 a. m., Monday, she was given 1 oz. of brandy in the nutritive enemata, which was repeated at 12 m. She had been getting strychnin sulph., gr. 1-30, hypodermically every 4 hours. At 2:15 p. m. she was given ⅜ grain morphin sulphate, hypodermically. At 2:45 p. m. she was taken to the operating-room, and the field prepared in the usual manner. At 3 p. m. 4 drams of Schleich's fluid No. 2 was infiltrated under the skin, and at 3:05 an incision 4 to 5 inches long was made directly over the gall-bladder region. The fat was incised, and 2 drams of the same solution were infiltrated into the sheath of the muscle. After waiting five minutes it was incised to correspond with the skin wound. The peritoneum was picked up with forceps, and incised to correspond with wound in the muscle. The gall-bladder popped into view at the upper angle of the wound, due to the intra-abdominal pressure. It was congested and the vessels injected. Two traction ligatures of silk were placed each side of its median line, and then it was incised, the peritoneal cavity being protected by gauze pads. The gall-bladder contained from six to eight ounces of thick, viscid, tarry-looking bile, and four gall-stones, which were faceted, and each was about the size of a medium-sized filbert, which were quite easily removed with finger and stone forceps. The peritoneal surface of the gall-bladder was stitched to the cut edges of the peritoneum with interrupted chromisized catgut sutures. A gauze wick was passed down the under surface of the gall-bladder into the peritoneal cavity, and the peritoneum was closed with catgut. Four through and through sutures (down to the peritoneum) were placed; the fascia of the muscle approximated; rubber drainage-tube placed in gall-bladder; with suture; through and through sutures tied, and skin approximated with horse-hair; collodion seal-gauze dressing; and patient put to bed. Time of operation, 45 minutes. There was some pain experienced when the peritoneum was opened, and considerable pain was felt when the gall-bladder was incised. There was some nausea when the peritoneum and gall-bladder were handled. The patient's mind was very clear throughout, and she made some very witty remarks to Dr. Hielscher, who sat by her head ready to give some ether in case it should be required, and to inspire the patient with confidence. The gruesomness given by the description of the operation was entirely dispelled by the jovial conversation carried on between Dr. Hielscher and the patient.

Rectal alimentation was continued. Water was given to moisten the lips and mouth. The bowels moved fairly well the second night with enemata, and she passed flatus. On the 4th day she was given calomel and castor oil, resulting in free stools. A rubber tube was attached to a drainage-tube leading to a bottle under the bed which received the bile. During the first 24 hours there was collected about one pint, and the dressings were freely saturated requiring several changes. During the next 24 hours the quantity lessened, until at the end of the 10th day only about 4 ounces collected in the receptacle during each 24 hours. At the end of the first 48 hours the gauze wick leading into the peritoneal cavity was removed. The patient was raised in bed on a bed-rest from the first day on, and on the 8th day she sat up in a chair. The stitches were removed on the 9th day. Small amounts of food were given after the bowels moved, and by the 5th day the patient asked for beefsteak and potatoes, which were given. The pulse has remained about 80 since her admission to the hospital. The respiration was somewhat accelerated during the acute attack and for a couple of days after the operation. On the night of the 2d day the temperature rose to 100°, but since then it has been normal or just a trifle above normal. On the 6th day irrigations with boric-acid solution were begun, which will be continued until the fistula is allowed to heal. The rubber drainage tube was left out of the wound on the 14th day, and the patient is preparing to return to her home on Friday, January 29, just three weeks from the date of admission.

CLINICAL MICROSCOPY

THE LEUCOCYTE COUNT IN APPENDICITIS

Within the last two years there has been much discussion between surgeons and hematologists concerning the value of the leucocyte count in appendicitis. Rehn (München Med. Wochenschrift) reports a study of 19 cases of appendicitis in which white-blood counts were made, and he comes to the conclusion that this procedure is of no value in the diagnosis or prognosis of this disease. We believe that these conclusions are too sweeping, and do not express the truth of the matter. From a study of the leucocyte count in over thirty cases, we believe the following conclusions are more nearly correct than those of Rehn:

The white count will not be of service in determining

(a) Whether perforation is or is not present.

(b) Whether perforation is about to take place.

(c) Whether the appendix is gangrenous or not.

(d) Whether peritonitis complicates the appendicitis.

(e) Whether the patient will or will not recover without operation.

The white count will determine

(a) Whether the appendicitis is catarrhal or suppurative, in the majority of cases.

(b) Whether the inflammatory process is spreading or not.

(c) Whether the disease is appendicitis or typhoid fever with appendiceal symptoms.

(d) Whether the disease is appendicitis or acute abdominal pain from renal calculus, gallstones, gastric ulcer, acute nephritis, acute obstruction, etc.

Many medical men believe that every laboratory test or procedure must give infallible evidence for or against a certain diagnosis, no matter what the stage of the disease or the condition of the patient. This is not the proper attitude in which to view these laboratory procedures. They are, as a rule, nothing more or less than aids in diagnosis. They should never be studied apart from the symptoms of the patient, and often require a special interpretation by some one familiar with the modifications of the test produced, often times by the same disease at its various stages and under varied conditions.

NEPHRITIS WITHOUT CASTS IN THE URINE

Since the time of Bright cases of nephritis have been observed at autopsy in which during life no casts were found in the urine. Adolf. Treutlein (Munch. Med. Wochenschr., Sept. 1903, 50th Jahrg., No. 35) explains this condition upon the theory that the casts are destroyed by the action of the bacillus coli, which inhabits the bladder and pelvis of the kidney. It is well known that casts will quickly disappear in urine which becomes alkaline in reaction. This is the reason why casts can not be found in the urine of many old men who suffer primarily with cystitis, and die in uremic coma from a pyelonephritis.

In all cases where urine is passed neutral or alkaline in reaction, it should be centrifugalized and examined immediately for casts, or, better still, it should be drawn by catheter and thereafter immediately examined.

DIAGNOSIS OF RENAL CALCULUS

One of the most helpful findings in the diagnosis of stone in the kidney is the presence of the "washed-out blood corpuscles" or "blood shadows" in the urine. These are red-blood corpuscles whose hemoglobin has been dissolved out by the acid of the urine leaving only a pale delicate ring, the interior of which is free from color. They are present almost constantly in the urine of patients during an attack of renal colic. In fourteen cases of renal calculus observed by the writer the "washed-out red cells" were found in 13

Geo. Douglas Head, M. D.

NORTHWESTERN LANCET
A SEMIMONTHLY MEDICAL JOURNAL
The Official Organ of the Hennepin County Medical Society
W. A. JONES, M. D. .... EDITOR
Editorial Office, 515 Pillsbury Building
W. L. KLEIN, PUBLISHER
SUBSCRIPTION, $2.00 A YEAR.
839-840 Lumber Exchange .... Minneapolis

FEBRUARY 15, 1904

DETENTION HOSPITAL AND A HOSPITAL FOR INCURABLES

Dr. Geo. Ricker, the city physician, appeared before the Board of Correction and Charities, and urged the construction of a separate hospital building for the care of the helpless and infirm. At the same meeting he presented the necessity of providing for the insane who were in need of temporary quarters, and that class of insane who could not, under the state law, be committed to the State Hospitals.

The large numbers of old people, senile dementias, helpless paralytics, infection and intoxication insanities that cannot be cared for in their homes, the homeless incurables, should be provided for under the wing of the City Hospital, but separated from the general hospital wards. This means an additional expense, but is for a worthy class. If the public knew how difficult it is to care for these people in a general hospital, and could realize how much they disturb the medical and surgical cases, there would be a unanimous demand for relief in the City Hospital. The inexperienced cannot appreciate the care these unfortunates need. The City Hospital was not constructed with a view of caring for the helpless or the insane. No one but the physician and nurse, or those who are in touch with institution life, can in any way understand the attention and service this class of patients require. The casual visitors see only the comforts that are thrown about the patients, and they cannot, nor would they, care to see the patience and work that falls upon the nurse who is obliged to divide her work so inconsistently. The helpless and insane are often unable to care for themselves in any way, and from the nature of their illness are filthy, unruly, and noisy.

The erection of a suitable building for all of these cases means a home for the helpless, and a detention hospital for the insane. The acute curable cases, and those for observation, and the temporarily confused from bodily illnesses, would be kept nearer their homes, would save the county and state their care in state hospitals, and would have the benefits of the physician and surgeons on the hospital staff.

Other states are providing and agitating psychopathic hospitals for the mutual benefit of patient and physician. The probate court is overwhelmed with applicants for a hearing. Many of these cases could be turned over at once to the City Hospital, and thus the county could be saved much expense. The time has come for the authorities to attend seriously to the maintenance of hospital surroundings for the helpless and insane. The care of both at the present time is a disgrace, and savors strongly of a return of medieval methods.

NERVE FIBRES AS CARRIERS OF DISEASE PRODUCTS

An editorial in the Journal of the A. M. A. of January 30 contains many valuable suggestions on this very important and comparatively new pathway for toxins. Meltzer's experiments demonstrated that if a nerve is ligated at one point, and the animal injected with methylene-blue, the nerve becomes stained throughout, but that if the nerve is ligated in two places the intervening portion remains unstained. The inference is that fluids enter from the extremities of the nerves, and not from the blood vessels which course through the nerve. The old theory that the axis-cylinder process of a motor nerve transmits its impulses to its central terminal by a streaming of molecular movements, seems reasonable, and explanatory for a few of the infectious neuroses. If tetanus and rabies are due to a specific toxin carrier to the peripheral neuron through the local injury of the tissues, other infections may reach the central nervous system in the same manner.

The editorial also states that Meyer and Ransom have obtained by careful experiments results that indicate what Meltzer proved, namely, that the peripheral nerves may carry substances within their axis cylinders toward and into the spinal cord. Tetanus toxin is not carried to the ganglion cell through the blood stream or lymph stream, except in a very roundabout and uncertain manner, the more likely channel being through the axis-cylinder processes. If tetanus toxin is injected into the nerve or into the cord the result is immediate. When antitoxin is injected into the tissues the effect is to retard or destroy the toxins in the blood and lymph streams. If the poison has already involved the nerve the antitoxin is of no service; hence it is suggested that antitoxin be injected into a nerve, preferably the one supplying the injured part, in order that it may be carried by the axis-cylinder to the ganglion cells. One recovery from tetanus where this method was employed has been reported, and it is hoped that further trials will be made by the intraneural route.

If this theory applies to tetanus and rabies, why may it not be extended and applied to other diseases of the central nervous system? It is recognized now that a neuritis from an injury, particularly if the injury is a severe one, produces changes in the central or terminal end of the motor neuron. True, the changes may be those of ascending degeneration, yet they may be in part toxic, perhaps wholly so as cases fully recover. Our ideas of inflammatory or degenerative changes may need reorganizing if the axis cylinder is a recognized carrier of infection. Perhaps the so-called cases of multiple neuritis which are of unknown pathologic origin, may be thrown into this new class. Is it not possible that syphilitic paralysis may be due to local infections which travel through nerves rather than carried by blood streams? We may explain a number of cord lesions, system lesions, that are seemingly due to diseases of small blood vessels within the cord, yet the explanation is not always convincing even though syphilis is a strong factor. Ill-defined and irregular symptoms are characteristic of nervous syphilis. Can they be explained satisfactorily as due to lesions of the vessels, or would a better explanation be that multiple lesions are more apt to occur through implication of nerve fibres? This is a suggestive field for speculation, and scientific research.

The bacteriologist usually defines the blood stream or the lymph channels as the carrier of bacteria and toxins. The microscopist will assist the solution of the problem by examining the peripheral end, as well as the central terminal, of the nerve fibre. We often know and can explain the result of disease, but we are too frequently in the dark as to its original source.

REPORTS OF SOCIETIES

HENNEPIN COUNTY MEDICAL SOCIETY

F. A. Knights, M. D., Secretary

A stated meeting of the Hennepin County Medical Society was held in the Society's rooms February 1, 1904, Dr. C. H. Hunter, president, in the chair, and about forty members present.

The Executive Committee, through the secretary-treasurer, submitted its estimate of expenses and income of the Society for the year 1904. This showed that the dues for 1904 will be $7.00.

On motion of Dr. R. J. Hill this report was accepted.

Applications for membership were received from Dr. Oscar A. Fliesburg, 72 Syndicate Blk., P. & S., Chicago, 1885; Dr. Thos. F. Quinby, 510 Syndicate Arcade, P. & S., N. Y., 1878; Dr. J. C. Sessions, 1229 Nicollet, U. of M., '02. All were referred to Censors. The Board of Censors reported favorably upon the names of Drs. J. W. Doyle, C. J. Wright, Wm. D. Bloom, Gilbert Seashore, and Wm. R. Polk; and a ballot being taken they were all declared elected to membership.

Dr. Geo. D. Head, librarian, submitted a report. This report on motion of Dr. Benjamin was accepted by the Society.

Dr. L. W. Day reported for the Book Club Committee that the committee is endeavoring to induce individuals of the Society to donate money or books. This committee was announced to consist of Dr. Day, Dr. Mann, and Dr. White.

Dr. Day presented a request from the Minneapolis Medical Club that this Society concur with the Club in supporting the City Health Commissioner in his effort to have tuberculosis reported, and premises disinfected, as is now done in other contagious diseases. In this connection a letter was read from Dr. P. M. Hall, Commissioner of Health, announcing that he proposed enforcing the pre-existing city ordinance to that effect. Dr. L. A. Nippert moved that the Society sustain Dr. Hall in this effort. This motion was seconded by Dr. McCollom, and was carried.

Dr. L. B. Wilson announced the coming of Dr. Ludwig Hektoen of Chicago, to address the Pathological Society at the University on the evening of Feb. 15, this Society having already been invited to attend.

Dr. G. Schwyzer presented a case of luxation of the patella connected by transplantation of patellar tendon. Also a case of tubercular wrist-joint after operation. Dr. Head presented a case of chronic adherent pericarditis. Dr. R. J. Hill reported a case of scarlet fever, marked by painful neuritis and secondary desquamation, raising the question of infectiousness during this desquamation.

The Society then took up the postponed discussion of Dr. B. M. Behrens' paper, "Catarrh and Predisposition" (published in THE LANCET, Jan. 1), which was discussed by Dr. E. J. Brown and the discussion closed by Dr. Behrens.

Dr. J. A. Watson read a paper entitled "Sarcoma of the Nasal Passages," which was discussed by Drs. Todd, Murray, Brown, and Wang, the discussion being closed by Dr. Watson. Papers by Dr. Wm. R. Murray on "The Submerged Tonsil and Its Operative Treatment," and by Dr. A. Lind on "Mechano-Therapy," were postponed until the next meeting for lack of time.

The Society then adjourned.

NEWS ITEMS

Dr. P. Kendall, of S. D., has moved to Onida S. D

Dr. G. W. White has located at Elk Point, S. D.

Dr. Geltch, of Parkston, S. D., has moved to Gurnee, Ia.

Dr. A. Klovstad, of Chicago, has located at Yankton, S. D.

Dr. McKechnie has moved from Kent, S. D., to Eagan, S. D.

Dr. R. F. Whetstone has moved from Cass Lake to Argyle.

Dr. A. A. Rankin has moved from Worthington to Rushmore.

Dr. H. J. Seaman, of Baltic, S. D., has moved to Rockham, S.D.

Dr. George E. Jackson, of Chatfield, has moved to California.

Dr. N. P. Chagnon has moved from Berwick, N. D., to Hamilton, N. D.

Dr. Lytle, of Cando, N. D., has moved to Devils Lake in the same state.

Dr. Alfred M. Browne, of Eagan, S. D., is in New York doing special work.

Dr. Rainville, of Kenmare, N. D., will move to McKinney, in the same state.

Dr. Julius Frankl has moved from Harvey, N. D., to Anamoose, in the same state.

Dr. T. O. Sanbo, who has been practicing at Drake, N. D., has decided to go elsewhere.

Dr. T. H. Wimer, of Marshall, is taking a post-graduate course at the New Orleans Polyclinic.

Dr. H. S. Vernon, of Rushford, died on Feb. 2d of pneumonia. Dr. Vernon was a graduate of Rush, class of 1900.

Dr. Wesbrook, the pathologist of the State University, has gone abroad for a study of the work done in his line in Europe.

Dr. C. M. Shanley, of Lidgerwood, N. D., has gone to New Orleans, where he will take a special course in eye, nose, and throat work.

Dr. Sargent, of Lansford, N. D., is in Chicago for a special course in medicine. Upon his return he will locate at Denbigh, N. D.

Dr. A. J. Kaess, of Ortonville, will have charge of the practice of Dr. Mallarian, of Fargo, N. D., during the latter's absence in California.

Dr. C. P. Dolan has moved from Waterville to Worthington, and takes the place left vacant by his deceased brother, Dr. Edward Dolan.

Dr. L. J. Brown, of Park River, N. D., has gone abroad for several months' special work. On his return he will locate at St. Cloud, Minn.

Dr. H. G. Collie, a recent graduate of the Northwestern Medical College, has located at Orient, S. D.

Dr. S. W. Ranson, of Dodge Center, died suddenly on the 3d inst., which making a call in the country. Dr. Ranson was 63 years of age, and had practiced at Dodge Center for thirty-five years.

The Washington County Medical Association met at Stillwater last month and elected the following officers: President, Dr. B. J. Merrill; vice-president, Dr. F. A. Stevens, of Lake Elmo; secretary and treasurer, Dr. F. G. Landeen.

At the annual meeting of the Steele County Medical Society, held last month at Owatonna, the following officers were elected: President, Dr. George Schultze, of Owatonna; vice-president, Dr. W. S. Wood, of Blooming Prairie; secretary, Dr. A. B. Stewart, of Owatonna; treasurer, Dr. W. C. Eustis, of Owatonna. Dr. W. C. Eustis, was also elected delegate.

One of the most successful local society meetings reported last month was that of the counties of Renville, Chippewa, Lac qui Parle, and Yellow Medicine, which was held at Dawson. A number of good papers were read, and a banquet enjoyed. The following officers were elected for the current year: President, Dr. A. G. Stoddard, of Fairfax; vice-president, Dr. H. M. Johnson, of Dawson; secretary, Dr. R. D. Zimbeck, of Montevideo; treasurer, Dr. C. E. Rogers, of Montevideo. The next quarterly meeting will be held at Hanley Falls.

The Rice County Medical Society met in annual session last month at Faribault, Dr. F. M. Rose, president, in the chair. A banquet was served at the Arlington, after which the business meeting took up all the time of the meeting. A fee bill was adopted, and the matter of advertising was discussed at length. A resolution to withdraw medical cards from all county papers was passed. Officers were elected as follows: President, F. M. Rose; vice-president, W. A. Hunt; secretary, F. R. Huxley; treasurer, W. H. Robilliard; censors, A. C. Rogers, E. Brubaker, and F. S. Warren.

The examination of applicants for appointment as assistant surgeon in the United States army will be resumed in Washington immediately after the close of the present session of the army medical school. It will embrace the full examination, as heretofore, at the conclusion of which those found qualified will be commissioned. Full information may be obtained upon application to the Surgeon General, U. S. Army, Washington, D. C. The examining board will probably reassemble about the middle of April next. Applicants are restricted in age to thirty years, and one year's hospital experience or its equivalent in private practice is required.

X-Ray Prize Essays

Believing that the further development of *x*-rays is of great importance to surgery and medicine and the human race, and to encourage research and disseminate the knowledge gained, the Illustrated Review of Physiologic Therapeutics offers the sum of fifteen hundred dollars in cash prizes for the best essays on "X-Rays in Medicine and Surgery," the first prize being $1,000.00. All surgeons, physicians, and hospitals interested in any branch of *x*-ray work should write to the Illustrated Review of Physiologic Therapeutics, 19 East 16th St., New York City, for information concerning title, time allowed, conditions, etc. This prize is on about the same plan as the recent "Preventive Medicine" prizes.

The annual meeting of the Southwestern Minnesota Medical Society was held at Luverne Jan. 14, 1904. The president, Dr. Emil King, in the chair. The following officers were elected for the ensuing year: Dr. F. R. Wieser, Windom, president; Dr. C. O. Wright, Luverne, vice-president; H. D. Jenckes, Pipestone, secretary treasurer; Dr. F. M. Manson, Worthington, censor; Dr. W. J. Taylor, Pipestone, was elected as delegate to the State Society, and Dr. C. C. May, Adrian, as alternate. The following papers were read: "Resuscitation after apparent Death from Chloroform Anesthesia," Dr. E. King; "Eye Strain," Dr. J. H. James, of Mankato; "Adrenalin in Surgical Practice," G. G. Cottam, Rock Rapids, Iowa; "Scarlet Fever," Dr. C. O. Wright, Luverne; "Instability and Defect," Dr. H. A. Tomlinson, St. Peter. Dr. A. E. Spalding presented a specimen of extra-return pregnancy, which he had operated upon 24 hours previously. The next meeting will be held at Pipestone July 14, 1904.

H. D. Jenckes, M. D.

SANATORIUM FOR SALE

Owing to the death of Dr. Sam C. Johnson, the Sanatorium at Hudson, Wis., is for sale by the administrator of Dr. Johnson's estate. The property is beautifully located on the bank of Lake Mallilieu, and is within the city limits. The building is steam-heated, electric-lighted, and supplied with modern appliances and apparatus. It has been very successful for a number of years, and will return a large interest on the money invested. Its location is so near the Twin Cities, and so far from a like institution, it need never lack for patients. It can be bought for a very low price, and to a satisfactory purchaser, reasonable terms will be given. For further information, address or call upon

Wm. H. Phipps, Special Administrator.

NORTHWESTERN LANCET

A Semimonthly Medical Journal

VOL. XXIV MARCH 1, 1904 No. 5

RECENT INVESTIGATION OF CERTAIN DISEASES ASSOCIATED WITH BACTERIEMIA:

TYPHOID FEVER, PNEUMONIA, SCARLET FEVER, ETC.[*]

By Ludvig Hektoen, M. D.

Director of the Memorial Institute for Infectious Diseases

CHICAGO

Of course it gives me great pleasure to address this society. Unfortunately, I am not able as were Drs. Wilson and Chowning, of this city, on a similar occasion in Chicago a short time ago to tell all about an entirely new disease,[†] including its cause. I shall take you along more familiar paths, paths that probably many of you have already traversed.

As you know, there are several diseases in which bacteria invade the blood. In these diseases the blood does not act merely as the vehicle of conveyance of the bacteria from one point of localization to another, but the bacteria live and multiply in the blood, and no doubt many of the symptoms are due to this fact.

The diseases that I have in mind and which I shall briefly review in the light of recent developments from this point of view are typhoid fever, pneumonia, and some of the diseases associated with streptococcus invasion of the blood.

BACILLEMIA IN TYPHOID FEVER

It is now well known that in typhoid fever there is a typhoid bacillemia. This typhoid bacillemia is early. It may be demonstrable as early as the first day of distinct disease. It continues as long as the fever is rising, and it recurs promptly whenever there are relapses and recrudescences. For these various reasons the demonstration of typhoid bacilli in the blood constitutes the most trustworthy means for diagnosis of typhoid fever in the early stages of the disease. At this point let me call your attention to the fact that the progress in the study of the bacteriemias, to which I have referred, is owing to the introduction of simple methods of securing the blood and of making the cultures. The blood is secured by simply making a puncture with sterile needle and syringe of a vein at the elbow, and then quite large quantities of the blood are inoculated into suitable media. The withdrawal of considerable quantities of blood for this purpose has been done now without evil result in thousands of cases in various parts of the world, and there need be no fear whatever of injury to patients, even to quite young children, on account of this procedure. By blood in quite considerable quantities I mean from 10 to 25 c. c., and when this is withdrawn under proper aseptic precautions it is not associated with more danger than is the puncture of the skin or the lobe of the ear. In our laboratory the withdrawal of blood for blood-cultures has been made many hundred times. Blood has been drawn, not only from the sick, but also from the well for other purposes than blood-cultures, and as yet there has been no unfortunate results; no local reaction of any kind has followed. So when this operation is done carefully it may be regarded as absolutely free from danger. The carrying out of the blood-cultures after withdrawal and inoculating the media necessarily requires the equipment of a bacteriological laboratory. The principal precautions necessary in making blood-cultures, as you will all readily understand, are those demanded by fundamental bacteriological principles so as to avoid contamination and consequent false conclusions.

---

[*] An informal address given at the February meeting of the Minneapolis Pathological Society. Reported for The Lancet by Mrs. M. I. Rogers.

[†] Dr. Hektoen refers to the investigation of Drs. Wilson and Chowning into the cause of spotted fever, to which reference is made in this issue of The Lancet by Dr. Head in the Department of Clinical Microscopy.—Editor of The Lancet.

In order to emphasize the diagnostic value of blood-culture in typhoid fever I may refer to the case developing in a physician working in our laboratory; here cultures of the blood showed the presence of typhoid bacilli upon the second day of the disease, that is, the second day that the physician felt himself not well. At the same time that the blood-culture was made, the agglutination reaction was made with negative result. In this particular case the agglutination reaction was not obtained until fourteen days later. In three other cases the symptoms were those of scarlet fever. The patients were admitted and treated as scarlet fever, but cultures of the blood showed the presence of typhoid bacilli, and the subsequent course of the disease was that of typhoid fever, except in one case in which the rare combination of the two diseases, typhoid and scarlet fever, probably occurred. In the other two cases it seemed to be typhoid fever associated with angina and erythema.

Blood-cultures as diagnostic means in such diseases as typhoid fever, I believe will be found of especial value in epidemics of typhoid-like diseases. As you know, there is very frequently great hesitation in reaching a definite diagnosis when epidemics of typhoid develop. We observed that in the case of the Ithaca epidemic last year it took weeks before the community finally knew that "the strange disease" was simply typhoid fever due to an infected water supply, an infection brought about by gross neglect of ordinary sanitary laws. Just so soon as the diagnosis of an epidemic of this sort is definitely established immediate and definite precautions will be taken to prevent further infection.

In the second place, the study of the bacillemia in typhoid fever has led, or is leading, to a change in our views concerning the nature of the disease. We have been in the habit of looking upon typhoid fever as the result of an infection from the intestinal tract in the walls of which the typhoid bacilli were producing well-known and characteristic lesions; but if typhoid bacilli enter the blood on the very first day of the disease, remain in the blood in large quantities until the fever begins to fall, and reappear when relapses occur, then certainly the bacillemia must mean something more than the transportation of bacilli from one part of the body to the other. By means of blood-cultures it has been shown by Schottmüller and others that in severe cases of typhoid fever the number of bacilli in a given quantity of blood is greater than in milder cases, and consequently Schottmüller attaches a certain amount of prognostic significance to the results of blood-cultures. Indeed, some question has arisen as to whether or not we should look upon the intestinal lesions as the result of the direct invasion of bacilli from the intestinal tract. This is a question which cannot be decided at this time. We all know, however, that the severity of typhoid fever does not stand in any relation to the extent of the lesions in the intestines. We know that sometimes there may be only one ulcer in the intestines. We know that it perhaps may occur without any intestinal lesions. Many years ago Wright and Semple came to the conclusion that typhoid fever was not simply an intoxication process due to the absorption of toxic substances from the intestines, but due to the multiplication of bacilli in the blood, for the reason that, as they found, large numbers of bacilli sooner or later appeared in the urine. I think we must regard typhoid fever as a real septicemia or, better, bacillemia associated as a rule with well-marked intestinal lesions. Of course we cannot but believe that typhoid bacilli enter the blood through the intestinal tract. There is a possibility, of course, that typhoid bacilli may gain entrance also through the tonsils, for in some cases of typhoid there is a well-marked angina.

When typhoid bacilli multiply in the blood they undoubtedly produce toxic substances of different kinds about which we yet know very little. Thus there is produced by reactions of an obscure character certain substances that agglutinate typhoid bacilli. The so-called hyalin thrombi of older writers may be red-blood corpuscles agglutinated by substances derived from the bacilli. There is also some evidence that as the typhoid bacilli go into disintegration in the blood, due to the bactericidal action of the latter, various toxic substances may be set free. A very interesting problem is: Why do human beings get typhoid fever? Now, the blood serum of man is strongly destructive of typhoid bacilli, thousands being destroyed in one or two hours by a minute quantity—0. 2 c. c. or so—of normal human serum. It is somewhat paradoxic that typhoid fever associated with bacillemia should develop under these circumstances. One or two explanations have been suggested. The bactericidal action of human and other sera is in many cases a complex one, being due to the inter-action of two distinct substances, one of which is readily destroyed by heat at 56° C. This substance we call the complement. The other substance, which is not destroyed so readily by heat and which must be fixed to the bodies of the bacilli before the complement can attack them, is the amboceptor or intermediary body. The complement is an exceedingly sensitive substance. It may be neutralized or bound by a variety of substances, such as calcium chloride and a large number of salt solutions, extracts of organs, glycogen, etc., and by the products of disintegrated typhoid bacilli themselves. I see in this last fact a possible explanation for the development of the bacillemia, namely, that as typhoid bacilli are destroyed they revenge themselves, as it were, by the products of their destruction neutralizing within certain limits the complement in the blood serum. In this particular instance the struggle we are in the habit of associating in our minds with the reaction set up by infectious diseases, is between minute particles and molecules in solution.

When the finer mechanism of the development of typhoid fever and of its involution is better understood it may be possible to point out new roads along which pharmacology and therapeutics will be able to pass to greater success than has been possible so far.

The third phase of typhoid fever to which a few words must be given is the discovery, as the result of blood-culture, that under the name of typhoid fever have passed other diseases, similar to typhoid, yet distinct because caused by organisms different from typhoid bacilli, although more or less closely related. I refer to paratyphoid fever. Cases of paratyphoid are rare. In a series of 30 cases of typhoid fever examined bacteriologically in our laboratory, two cases of paratyphoid fever were discovered, and isolated cases of paratyphoid fever have been reported from various parts of the world. One or two small epidemics have been described in Germany. As compared with typhoid fever the clinical course appears shorter, milder, there is less intestinal disturbance and much less danger of intestinal hemorrhage, the onset is more abrupt, and the termination more abrupt. The dissemination of paratyphoid bacilli appears to be due to the same causes as that of the typhoid bacillus. Undoubtedly the failure to obtain typical agglutination in cases that clinically appeared to be typhoid fever is explainable to some extent upon the score of paratyphoid fever. We must remember, too, that the agglutination reaction may be delayed even in cases of undoubted typhoid fever. I speak of the limitations of the value of the agglutination reaction in order to emphasize the much greater diagnostic value of blood-cultures in these diseases. An interesting recent development in this field is the fact that typhoid fever and paratyphoid fever probably may occur in the same individual at the same time, as shown by the development on plate-culture of the blood of both typhoid and paratyphoid bacilli.

Just a word concerning the lesions of paratyphoid fever. Ever since the first description of paratyphoid, pathologists have been interested as to whether the intestinal lesions would be found to be the same as those in typhoid fever. There are now recorded post-mortems in five cases. Wells and Scott of the University of Chicago, who furnish the fifth case, have analysed the records. In two there were no intestinal lesions, in the other three there were ulcers, but dysenteric and not typhoidal in character. The other lesions are also somewhat different from those of typhoid fever; the splenic enlargement seems to be the same, but there is less swelling in the mesenteric glands in paratyphoid. It seems that these differences in the lesions indicate that there must be a real difference in the biology of the organisms concerned in typhoid and paratyphoid.

PNEUMOCOCCEMIA IN PNEUMONIA

The earlier blood-cultures in pneumonia gave rise to divergent results. In only a small proportion of the cases were the results positive. As improved methods were adopted the positive results became more numerous and the most recent results indicate that pneumococci occur in the blood in practically every case of lobar pneumonia. In 50 cases of pneumonia in which blood-cultures were made by inoculating large quantities of blood directly into broth, Prochaska obtained pneumococci in ever case. In 117 cases of pneumonia which have been studied by Dr. Rosenow (under the auspices of the Alumni Association of Rush Medical College) he has demonstrated the presence of pneumococci in the blood of 105 cases. In Dr. Rosenow's series the negative cases were those nearing the crisis or after it. When blood-cultures were made on the third, fourth, and fifth days of an ordinary attack of lobar pneumonia, pneumococci in considerable numbers developed in practically every instance.

There is nothing particularly noteworthy in connection with the method employed by Rosenow except the use of large quantities of blood —1 or 2 c. c. to 50 or 75 c. c. of broth. The reason that the earlier investigators failed is probably this: They attributed to the blood serum a destructive effect upon pneumococci, which it does not possess, and consequently used only small quantities of blood. Human and other blood constitutes one of the best means of preserving the virulence and viability of pneumococci. This is emphasized by Washbourn in England, and has been verified again and again by Dr. Rosenow. By placing a small quantity of infected blood in the ice-box Rosenow has been able to recover living virulent pneumococci weeks and, in one or two instances, months afterwards. It is interesting to note that it is probably the hemoglobin in the blood which has this preservative effect upon the pneumococci.

At this point I wish to demonstrate the different effects that streptococci and pneumococci have upon red blood corpuscles. Streptococci produce under certain conditions a substance which lakes red blood corpuscles. This substance—streptocolysin—has been studied by Besredka, G. F. Ruediger, and others, and its action may be seen when streptococci are sown on agar to which has been added a small quantity of defibrinated human or rabbit blood. The colonies become surrounded by a clear zone due to the laking of the corpuscles in the neighborhood; pneumococci, on the other hand, produce only a slight laking, and the colonies themselves assume a greenish tinge. (Plates showing these points were passed around). Dr. Rosenow believes that this difference between pneumococci and streptococci is constant and definite.

Pneumococcemia is consequently a constant and characteristic feature of pneumonia. Naturally, the diagnostic value of blood-cultures in a stormy disease such as pneumonia, in which the clinical symptoms are so distinct and the physical findings so characteristic, must have a limited value, except in obscure and complicated cases. In Dr. Rosenow's series are three or four cases in which the cultures from the blood developed pneumococci even though they were made so early in the disease that the physical signs had not yet developed. In one instance positive results were obtained twelve hours after the initial chill, and before any signs could be detected in the lungs. The peculiar limitation and distribution of the lesions in lobar pneumonia will probably long constitute a puzzling problem, as will also the relationship between the pneumococcemia and the pulmonary lesions. Are the lesions in the lungs secondary to a primary invasion of the blood, or is the invasion of the blood secondary to a localization of pneumococci from the bronchi in the lungs? This question cannot be decided at this time, but I would emphasize, as not without significance, the fact that pneumococci are demonstrable in the blood in certain cases before pulmonary symptoms can be detected, and that in rabbits the injection of pneumococci under the skin or in the peritoneum may give rise to foci in the lungs which resemble the lesions in lobar pneumonia, and, further, that an injection of pneumococci in the bronchi gives rise to the rapid absorption of the cocci into the blood.

Another phase of pneumonia to which a few moments may be given is the leucocytosis. What is the relation of the pneumococcemia in pneumonia to the leucocytosis? It has been said by some that the fall which sometimes occurs in severe and subsequently fatal cases of pneumonia is due to the direct invasion of the blood by pneumococci. Now, that view does not harmonize with the presence of pneumococci in the blood throughout the major part of the course of the disease. Dr. Rosenow has made some very interesting experiments in rabbits upon this problem. He established in rabbits a pneumococcus infection, and counted pneumococci (by means of plate-cultures) in small quantities of blood, from time to time, at the same time that he counted the leucocytes. He found that just as soon as pneumococci enter the blood, the leucocytes begin to increase in number. Increase in the number of both pneumococci and leucocytes now goes on up to a certain point at which there is a fall in both; in the fatal cases the leucocytes go on diminishing, whereas the pneumococci continue to increase until they have reached enormous numbers. In some of the rabbits which recovered, the leucocytes remained high, and while the number of pneumococci also reached considerable proportions recovery nevertheless took place. This seems to indicate that leucocytes must play an important role in pneumococcus infection. The results of these experiments are in accord with the view that a high leucocyte count in lobar pneumonia is indicative of favorable progress, whereas a low leucocyte count is ominous.

We know nothing concerning the manner in which the pneumococci perish in the infected organism as recovery takes place, but the fact that the blood-serum is without destructive effect points to the leucocytes as the agents that possibly have a great deal to do with the disintegration of pneumococci. Dr. Rubin in the pathological laboratory of Rush College found that when rabbits are alcoholized or etherized and then infected with pneumococci there is less increase in the number of leucocytes and more rapid increase in the number of pneumococci in the blood, and death occurs sooner than in the normal control rabbits. This points to a defensive role on the part of leucocytes in pneumococcemia, and it would seem as if alcohol and ether have the power of paralyzing the action of the leucocytes.

STREPTOCOCCEMIA IN SCARLET FEVER

In typhoid fever and pneumonia the bacteriemia present is a characteristic and integral part of the disease. In streptococcemia it concerns in many cases complications of pre-existing diseases, and it is the occurrence of streptococcemia, especially in scarlet fever, that I wish to discuss in the few minutes now remaining.

Since the introduction of bacteriological methods in the study of scarlet fever, the frequency of streptococcus invasion in fatal cases of this disease has attracted universal attention. Babes, Baginsky and Sommerfeld, Moser, and others reached the conclusion that scarlet fever may be a streptococcic disease. On the other hand, fully competent investigators noting the fact that in violent cases of scarlet fever in which death occurs early there was absence of streptococcus invasion, were more inclined to regard the streptococcus invasion as secondary. Under these conditions it seemed advisable to study the blood bacteriologically during life in scarlet fever. This has now been done in at least two quite large series. The first series to which I shall refer is one of 100 cases in the Memorial Institute for Infectious Diseases in Chicago. In 12 cases streptococci were demonstrated in the blood during life. These 12 all recovered although several of them were very severely ill. Streptococci were demonstrated in the blood as early as on the first, second and third days, but more commonly on the third and fourth and fifth days of the disease. The majority of the cases were over 10 years of age.

The second series of cases is that of Jochmann, at that time in Hamburg, and comprises 161 cases, in 25 of which streptococci were demonstrated in the blood during life, all the cases being fatal except one. How to explain this difference between the results in the two series is of course difficult, but the following points must be considered:

(1) Our cases occurred in the course of a mild epidemic, the general mortality of which was in the vicinity of 10 per cent. Jochmann's cases occurred in a severe epidemic, the general mortality of which has been set at about 40 per cent.

(2) In Jochmann's cases it concerned children under 10 years of age whereas most of our cases were over 10 years of age, many of them over 20.

(3) Our series is a series of unselected cases, mild and uncomplicated as well as severe and complicated, whereas in Jochmann's cases it is not so clear that the cases were unselected. The

impression obtains that only severe cases were admitted to the hospital.

One of the most important points made by Jochmann in discussing his results is in regard to the prognostic significance of streptococcemia in scarlet fever in children; when streptococci are demonstrated in the blood of a child under 10 years of age with scarlet fever it would mean practically a fatal prognosis. Whether this gloomy outlook is justifiable by the material at hand is somewhat doubtful, because, since the introduction of bacteriological methods of study of the blood in cases of septicemia in general, we have learned that a considerable percentage of the cases of streptococcemia of various kinds recover. Further observations, especially in children under 10, must be made before any definite opinion can be formed on this point.

In 70 fatal cases of scarlet fever studied by Jochmann, streptococci were demonstrated in the blood of 50. It is interesting that in 25 of these 50 cases streptococci were absent in the blood so far as that could be determined by cultural methods within a few hours of death; that is, the cultures remained sterile. In the other half of the cases the cultures during life gave positive results. The number of streptococci present in a given quantity of blood withdrawn during life varied greatly. The number of colonies that developed upon plates inoculated with 1-2 c. c. of blood would be from one to 600; whereas the same quantity of blood withdrawn after death gave a very much larger number of streptococci. This indicates that if streptococci are present in the blood shortly before death, even in very small numbers, they multiply very rapidly afterwards.

A word or two concerning the genesis of the streptococcemia in scarlet fever. According to Hilbert streptococci are present upon the tonsils in health. Whether or not these results will stand is of course somewhat doubtful, but I think that streptococci are frequently present in the throat in health. We know that in scarlet fever the number of streptococci in the throat rapidly increases.

George H. Weaver found that in the cultures made from the tonsils in the early stages of scarlet fever, almost pure cultures of streptococci frequently developed. In the majority of the severe and fatal cases of scarlet fever it is easy to understand from the nature of the tonsillar lesions why streptococcus invasion of the blood should take place. Jochmann has described in full the tonsils in some of his cases. There was a massive covering of streptococci upon the surface of the tonsils, the epithelial lining of which was absent; often there was a growth of streptococci deeply into the tissues, and in certain cases suitable sections would show extension of the strepticocci into the walls of the blood-vessels. Then there may be an invasion by the lymphatic glands also, which are so greatly swollen in scarlet fever. It is also possible that streptococci invade the blood without great changes either in the tonsils or in the glands of the neck. Perhaps they are carried to the blood by some adventurous leucocyte. A striking instance of rapid streptococcus invasion of the blood occurred in a young physician working in our laboratory. On the morning of a certain day his throat was sore. At 5 o'clock he had a very severe chill, so severe that in order to sit he had to hold himself to the chair. A few moments afterwards a blood-culture was made, and in this culture streptococci developed in considerable numbers. The chill was followed by vomiting and considerable fever, the illness lasting for a day or two, and ending in a prompt recovery. There was a patch upon one tonsil which gave in culture only streptococci, so that we have here an instance of an acute streptococcus infection of the throat associated with a transitory streptococcemia ending in prompt recovery.

In this connection I would like to refer to the fact that in nurses and in physicians taking care of scarlet-fever patients, streptococcus tonsillitis is not at all infrequent. It has occurred to me that possibly we are not paying enough attention to the prevention of the dissemination of virulent streptococci in our treatment of scarlet-fever patients in the hospitals where a mild case of scarlet fever is put in the next bed to a severe case, so that there is an abundant chance for the transferrence of virulent streptococci from patient to patient. Now, there is some reason to believe that as streptococci multiply in the human body they may increase in virulence. We know that one of the best methods of preserving the virulence of streptococci—and, by the way, the virulence is, as you know, a most unstable quality—is to grow it in media containing human-blood serum. As evidence of the possibilities of streptococci as regards virulence, I would cite the now well-known fact that by successive passages from one rabbit to another it may be possible to so increase the virulence of first almost non-virulent cultures that in the end only a few streptococci may suffice to produce rapidly fatal infection.

Evidently the general defenses of the human organism against invasion by streptococci are weak. In the first place human blood serum has no destructive power upon streptococci. It was thought at one time that the reason that so many persons suffering from chronic heart disease, etc., die from streptococcus infection, is due to the loss of the bactericidal properties in the blood, but the development of these streptococcus infections cannot be explained on the score of the loss by the blood of some property which it normally does not possess. Here again the indications point largely to the leucocytes as playing an important part in the reaction that takes place in the infected body. You are all familiar with the fact that in scarlet fever there is a well-marked leucocytosis. So long as the leucocyte count is high then the prognosis is regarded as favorable. There is some evidence that virulent streptococci have the power of destroying leucocytes, and this particular substance has been called streptoleukocidin, but it has been studied so thoroughly as the hemolysin to which reference was made. This is another field for investigation along chemical and toxicological lines in the hope that light may be thrown upon the exact mechanism of infection.

Returning to the question as to whether streptococci are the cause of scarlet fever, it may be said in favor of this theory that there is very frequently a general invasion of the body by streptococci in fatal cases, and, furthermore, that in practically all cases of scarlet fever there is a great increase in the number of streptococci in the throat. Against this theory would speak the absence of a general invasion of the body by streptococci in the so-called foudroyant cases of scarlet fever in which death occurs within a few hours to three or four days after the onset of the disease. In some of these rapidly fatal cases it has been shown by Jochmann that there is only slight evidence of increase in the number of streptococci about the tonsils. Furthermore, against the theory of scarlet fever a streptococci disease would speak the fact that it is impossible to differentiate the streptoccoci that occur in scarlet fever from other familiar streptococci, either by cultural or biological tests. It has been claimed that the streptococci of scarlet fever are agglutinated in a specific way by the serum of scarlet-fever patients, but careful study of this question by Dr. Weaver has shown that this claim cannot be substantiated. Then, again, a very important argument against the theory is the fact that while one, even mild, attack of scarlet fever gives rise to a lasting immunity to scarlet fever there is no evidence that an attack of scarlet fever produces any immunity to streptococcus infection. In the same direction it seems to me would go also the force of the following fact, namely, that in smallpox and to a less extent in diphtheria and measles there is also a frequent streptococcus invasion. Ewing in New York observed a general streptococcemia in something like 30 cases of smallpox. He believes that fatal smallpox is always associated with streptococcus invasion. In Cleveland, Perkins and Pay observed a general streptococcus invasion in, I think, 38 of 40 cases of fatal smallpox, and all these investigators state as their impression from the study of their material that without streptococcus invasion smallpox would be a relatively harmless disease. It has been claimed that smallpox is a streptococcus disease, but this claim has no real basis. Perkins and Pay could not produce smallpox lesions in monkeys by inoculating streptococci from smallpox cases, but they could produce it by inoculating material from the cutaneous lesions of smallpox in which there were no streptococci. Smallpox is certainly a disease which is not due to streptococci. The percentage of streptococcus invasion in diphtheria and measles is less than in scarlet fever and smallpox. It seems to me that it is reasonable to conclude that in the large majority of children dying from scarlet fever, death is due to streptococcus invasion, but that there is no strong evidence of direct etological relationship between scarlet fever and streptococci even though the latter are of such paramount importance in this disease. There is great need of an efficient antistreptococcus serum. We can understand why the use of blood from convalescent scarlet-fever patients should give unsatisfactory results when injected into scarlet fever patients, because what is desired is not an antiscarlatinal serum so much as an antistreptococcus serum.

RESECTION OF THE ELBOW,—OSTEOTOMY FOR AN OLD POTT'S FRACTURE WITH DEFORMITY—CYST OF THE THYROLINGUAL DUCT—OVARIAN CYST AND PUS-TUBE*

By J. H. Dunn, M. D.

Professor of Surgery, University of Minnesota

MINNEAPOLIS

Gentlemen:

Case I.—Our first operation this morning is a resection of the elbow-joint. Resections of this joint may be made:

First, for injuries such as compound comminuted fractures or gun-shot injuries of the joint; second, for disease, such as tuberculosis or necrosis from any cause; third, for anchylosis, since a perfectly stiff elbow even when anchylosed in the most favorable position, namely, at a right angle, is decidedly inferior to the average result of a resection; indeed, the results of resection of this joint are among the most favorable of resections, at least of the larger joints.

All three of these causes enter into the reasons for this resection. The primary trouble was traumatic. You observe three or four fistulous openings which lead down to necrosed bone, and there is almost complete and firm anchylosis of the joint. The patient is a man 32 years of age. Two years ago in a pugilistic encounter he struck a man, and sustained a backward dislocation of both bones of the fore-arm. Here is a point worthy of note. This dislocation is most common in children, but rather rare in adults. It is ordinarily easy of diagnosis, not difficult of reduction, and ordinarily the prognosis is good and final function quite perfect. In this case for some reason, doubtless largely or wholly through the patient's carelessness, for he is a rather strong-headed man, and inclined to drink, the dislocation, if ever reduced, was allowed to relapse, and he came to me one year ago with an old un-reduced backward dislocation of both bones. As far as the *x*-ray examination disclosed, it was a simple backward dislocation without complication, but dislocations of a year's standing are difficult and often impossible to reduce, and I found it impossible to replace the bones without opening the joint, which I did. You will observe that the whole outer surface of the elbow region is made up of scar tissues, the result of a burn in childhood. This unfavorable skin, with perhaps the traumatism of the attempts of forcible reduction before the operation, led to some infection of the wound, so that the joint became pretty stiff. Some two months later an attempt to break up the adhesions under chloroform was made, and we succeeded in getting a fair range of motion, so that a good useful elbow was looked for. But some time later the arm became swollen and inflamed, a sinus formed, and several small pieces of bone escaped; and from that time to this sinuses open and close, and occasionally discharge bone. You note three openings on the posterior aspect, and a probe passed by them detects bared and necrotic bones. Hence we shall remove the dead bone, and resect the joint.

Several different incisions have been proposed for this operation, but the simplest and the one most commonly employed is the straight posterior median one, which I employ here, crossing the center of the olecranon, and extending about two inches on the ulna and a like distance on the humerus. We next clear the olecranon and condyles of the humerus, keeping tight to the bone, and stripping off the periosteum and soft parts together. In clearing the internal condyle we exercise the greatest care not to injure the ulnar nerve, which winds around it. In this case there are special difficulties, as all the tissues are matted together and rendered almost unrecognizable by repeated inflammatory attacks. Having opened the joint and turned the ends of the bone out, we find the joint surfaces badly disorganized and necrotic. We now saw off the ends of the bones and partially close the wound, leaving in this case ample drainage, since the wound is already infected. We next apply a large aseptic dressing from the axilla to the hand, place the latter in a position midway between pronation and supination, with the fore-arm partially extended, and apply a plaster cast over all. The after-treatment will be directed to securing a moderate range of motion. There are two dangers to function that we wish to steer between,—on the one hand, too perfect and long-continued fixation may lead to anchylosis; or, on the other hand, especially when considerable bone has been removed, too little fixation may lead to a flail-joint. The best results in elbow resections follow from a moderate range of motion, about half, or a little more than half, the normal range. Such an arm will be strong and useful, while the flail-joint will be weak and unhandy, though it may be rendered quite useful by the aid of apparatus. With this object in view after about ten days we shall begin passive motions, and try to get the best range of motion compatible with a strong arm. Thus has this elbow been sacrificed through carelessness, from a simple accident, which a few weeks of proper treatment at the right time should have saved.

---

*A surgical clinic at St. Mary's Hospital, February 1, 1904.

While on this matter I wish to show you a case operated upon three weeks ago to-day.

CASE 2.—This man, a laborer, aged 30, about one year ago sustained a severe compound fracture invading the ankle-joint, his leg being run over by a truck. Here is a skiagraph of his leg taken when he came under my care three weeks ago. You observe a fracture of the tibia about two inches above the external malleolus, the lower fragment being displaced outward, and the internal malleolus is broken off and displaced far inwards, so that the foot is deflected far outwards from its normal position. There was also a rotary displacement, so that the foot turned outwards nearly to a right angle with the mesial plane of the body. When this man walked his toes were directed outwards instead of forwards, and he rested on the inner side of the foot instead of on the bottom; otherwise the function of the limb was remarkably good. This, then, was an old Pott's fracture solidly healed with great deformity, the deformities which we should especially guard against in this fracture. This outward displacement is prevented by a little over-correction of the outward displacement, and the toes are placed and held in their normal direction, and the foot not allowed to roll outward, as it is so inclined to do if not held in the proper position.

Now, looking at this skiagraph, how would you naturally suggest a correction of the deformity? Probably you would first think of cutting down at the points of fracture, and rebreak at the old lines of fracture. Well, that might be considered, but we should not only open a large joint, but, still worse, make a fracture into it, and our result might be better, or worse, than the present case. There was a much simpler alternative in this case, viz., an osteotomy, about two inches above the joint. Through a small incision a chisel was introduced, and a wedge-shaped osteotomy of the tibia was made. In like manner the fibula was rebroken at the old point of fracture. Then the foot was readily displaced inwards about twenty degrees, and rotated on its axis about forty degrees, thus bringing the foot into its normal position, and a plaster cast applied to the foot and leg. This is the second dressing. It might have been the first, but at the end of ten days I opened the cast to remove the two subcuticular, silk-worm gut stitches by which the two wounds were closed. You may note that the scars are barely visible, and that the foot is in excellent position and looks very straight. Closer inspection reveals this compensating curve in the lower part of the tibia, but the leg looks very good. He will now be able to walk on the sole of his foot and toe forward, and at a minimum of cost in the way of time and discomfort. As he tells us, he has had little or no pain, no swelling or reaction from the osteotomy. We will apply a new plaster cast, and let him about on crutches.

CASE 3.—This fifteen-year-old boy comes to us for a rather rare trouble. His past health has been good, and there is nothing in his history that need detain us as having any bearing on the present trouble. He states that several months ago a small swelling, or tumor, appeared in the middle line of the neck just over the larynx. This was removed by his physician, and there has since remained a small fistulous opening, which closes and opens, and discharges a little pus. You note a scar about an inch long over the larynx, in the center of which is a small fistula, into which a probe may be carried a short distance. Above this a distinct cord may be traced upwards to the hyoid bone where it is lost. I have had, one time and another, three of these cases. All had been operated upon from one to half a dozen times, but had continued to discharge intermittently a slight secretion, indicating that we have to do with a cyst which has not been entirely removed. This is a cyst formed in the remains of the thyrolingual duct, a fetal structure, which, like the branchial clefts, is normally obliterated, but which may, through errors of development, persist and give rise to cysts or fistulæ in the neck. This duct originally extends from the foramen cecum, under the hyoid bone, into the neck to the isthmus of the thyroid gland. The part of this tract behind the hyoid sometimes persists, and becomes distended, forming what is often termed a subhyoid bursa, or dermoid cyst. That I take it is the condition we have here. I therefore dissect out this tract snug up to the hyoid bone, as you see, and as it is severed at this point its center has the appearance of mucous membrane. The incision is closed with sutures, a proper dressing applied, and the patient may be sent home as soon as he recovers from the anesthetic.

In my other cases this treatment has permanently closed the fistula, and I believe it will in this one, though, of course, the tract may be open further up in the floor of the mouth.

Case 5.—This woman is 27 years of age, married five months, never pregnant. She came to us principally seeking relief from a very profuse leucorrhea, which she states is of several years' duration.

On examination I find a decided tumor in the right ovarian region. This is tender and somewhat fixed, but not so much so as a purely inflammatory mass and she admits that she has not been very well for several months, having lost flesh and felt weak and unable to work with comfort. For some reason her account of herself is very unsatisfactory. She says her menses are regular, not very painful, and that she has not been sick in bed. With so poor and indefinite a history, it is difficult to decide what the exact diagnosis should be. I can only say that it involves the right ovary. The mass seems to be the size of an orange, and might be a small dermoid of the ovary, as it feels very hard. I suspect, however, there is some inflammatory complication.

On opening the abdomen through the border of the right rectus, I find, first, that the omentum is bound into the pelvis by firm adhesions. These are separated with some difficulty, and the damaged omentum ligatured off and removed. I next find that we have a large pus-tube, under this is an orange-sized ovarian cyst. We now place the patient in the Trendelenberg position, and with large moist gauze pads exclude all the intestines from the operative field. The pus-tube is intimately adherent to the rectum and separated with difficulty. As it is detached, pus exudes in considerable quantities. This is sponged up as clean as possible, and the tube and ovary removed. I now examine the other ovary and tube. They appear to be healthy and normal, except that they are both bound down by firm adhesions. These are broken up, the tube loosened, and its opening rendered patulous. There is a considerable oozing from the broken-up adhesions. We pack the pelvis for a few minutes with iodoform gauze, and lower the patient to the horizontal position. Now we take out our gauze packing, and close the incision, layer by layer, with catgut suture up to the skin, which may be approximated by a single subcuticular silk-worm gut stitch, or with a buttonhole stitch of horsehair. It is not very material which, and to save time, as the horsehair is at hand, I think we will use it this time.

We have, then, a small ovarian cyst, which has something of the appearance of a dermoid, with a pus-tube the size of a very large finger, containing a bad-looking pus. Observe how thick the tube is, indicating a chronic process. I will not attempt even now to further diagnosticate this specimen, as to the nature of the infection or the exact variety of the tumor, but will send it undisturbed to the laboratory for examination.

Note.—The pathologist, Dr. W. M. Chowning, reports the tumor to be a dermoid cyst containing teeth and hair.

THE HOSPITAL BULLETIN

ST. BARNABAS HOSPITAL

MINNEAPOLIS

DISEASES OF THE KIDNEY, WITH COMPLICATIONS

SERVICE OF DR. A. E. BENJAMIN

The diagnosis of definite lesions involving the kidney is occasionally quite difficult. Associate lesions of other organs or tissues in the vicinity of the kidney, especially of the right abdominal cavity, may make the diagnosis still more uncertain. A diseased gall-bladder, or the presence of calculi within that organ, may in some cases mask any kidney symptoms. A diseased appendix occasionally misleads some surgeons. Tumors and other growths, and, in women, ovarian or tubal diseases, may interfere with a certain diagnosis. A prolapsed kidney sometimes interferes with the free escape of bile into the duodenum, or with the onward passage of feces along the ascending colon. When it produces a kink in the ureter, it can lead to serious complications, which produce symptoms at times that resemble colic, due to passage of calculi through the channel to the urinary bladder.

The following cases will illustrate some of the points above mentioned:

CASE I.—Mrs. B——, aged 44, American, patient referred by Dr. Long, of Rockford, Iowa. Family history, good. Personal history: Patient quite thin in appearance, weighing 95 lb., was very nervous, and complained of some digestive disturbance, irregular appetite, and disturbed rest. She had had attacks of severe pain, especially at night, for the last year and a half. These attacks would be accompanied by dyspnea and some vomiting. The patient would become anxious and excited. The pains extended from the ribs to the groin on the right side, and pressure over the right kidney caused considerable pain. The kidney was greatly prolapsed. It seemed very long, flat, and flabby. In lying on her left side, she would have a pulling sensation from the right. There was some tenderness over the gall-bladder and the appendix. The liver was somewhat enlarged. The attacks of pain were accompanied by a lessened amount of urine excreted, but she had a frequent desire to urinate. Subsequent to the attacks a great quantity of urine would be passed. The blood-examination indicated hemoglobin of 70 per cent, and a leukocyte count of 6,000. The urine contained some pus and albumen. The attacks became more frequent the last few weeks, they occurred from two to eight days apart, and were also getting more severe. The patient would appear greatly agitated during the attacks, and would think she was about to die. Vomiting frequently accompanied the attacks.

Operation, April 6, 1903. A lumbar incision was made because of the indication of right-sided disease with involvement of the kidney especially. The appendix was sought for, and removed through this opening. The appendix was not especially diseased, but there had been some catarrhal inflammation. The liver was enlarged and prolapsed. The gall-bladder was examined, but no stones could be found. The kidney was low down and quite flat. It was one-third longer than normal, and quite flabby. The pelvis of the kidney was very much dilated, showing that there had been some obstruction of the ureter from kinking or from calculi, causing hydronephrosis. The fibrous capsule was adherent. An incision into the pelvis of the kidney showed a thickened condition of the membrane forming this part of the organ. Even in this flabby state the pelvis was about four times its normal size. There were hemorrhagic spots in the mucous membrane and signs of recent inflammation from the congested and dilated condition of the blood-vessels. The pelvis was explored thoroughly, but no stones could be found along the ureter or in the kidney. The opening in the capsule was stitched up with several layers of catgut. The fibrous capsule was split longitudinally, and two flaps made, being connected at either pole of the kidney. These flaps were one and one-fourth inches in width, and were stitched up with chromicized catgut between the fibers of the quadratus lumborum muscle. A wick of gauze was placed down to the pelvis of the kidney for drainage. (See Fig. 1.)

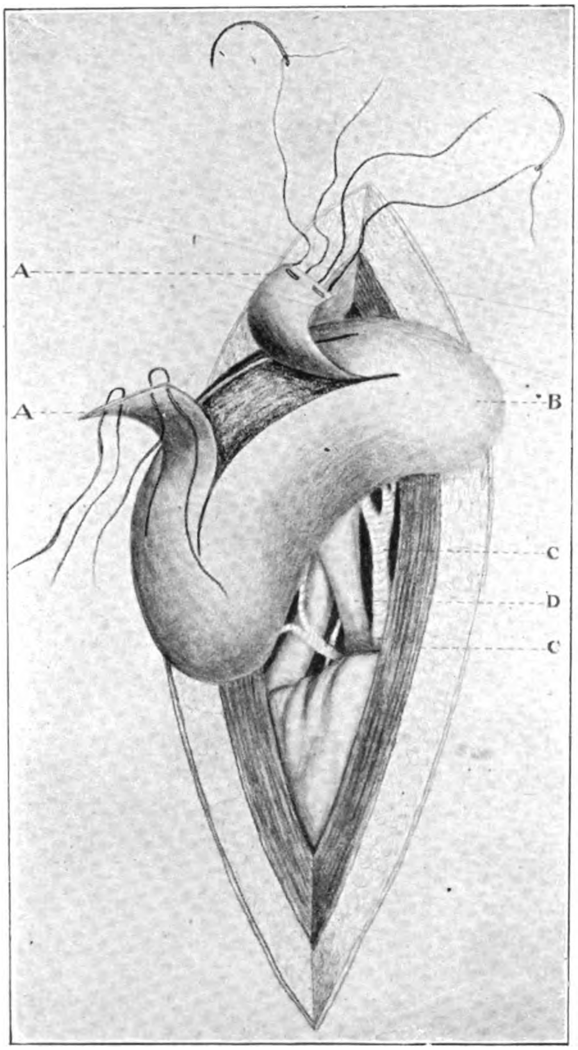


Fig. 1.

AA—Reflected flaps of fibrous capsule.
B—Kidney.
CC—Renal vessels.
D—Ureter.

The patient became very nervous and restless directly after the operation, and gave up hope entirely. Her physical condition was good. Her temperature did not go above 99.5°. Her pulse became a little more rapid and weak. She succumbed on the evening of the 8th of April, 1903, with no apparent cause other than the mental shock.

Case 2.—Mr. P——, aged 30, farmer. Family history, good; personal history, unimportant, excepting that for over a year he had complained of attacks of pain in the left hypochondriac region, radiating down to the groin. These pains gradually became more frequent and severe. It was noticed that there was less urine excreted during the attacks; afterwards the flow became more abundant, and after a time the pain would gradually cease. There had gradually developed obstipation, which was especially marked during the attacks of pain. The patient had steadily lost in weight since the beginning of the disease. An examination revealed a tumor in the left abdominal cavity, apparently continuous with the kidney, part of the mass fluctuated and resembled a cyst.

Diagnosis.—Malignant growth, or cystic kidney.

Symptoms at the time of examination: extreme pain, cramps, bowel obstruction, nausea, and vomiting, and diminished urine.

An operation was performed because of the extreme suffering and partial obstruction to the bowel, and at the earnest solicitation of the patient, who had a very anxious expression. An incision was made through the linea semilunaris on the left side. A large cystic kidney with a dilated pelvis was found. A tumor occupying the region between the kidney and the spine, which to all appearances was an aneurysm of the left renal artery, but at a lower level, seemed to interfere with the flow of urine, and possibly accounted for the subsequent dilatation of the pelvis and cystic formation of the kidney proper. The tumor, kidney, and ureter formed such a large adherent mass that it was impossible to do anything more on account of the extreme weakened condition of the patient. A few days afterwards the patient succumbed, but a post-mortem was not made, hence we were unable to determine the true pathology of the disease.

Case 3.—Miss L——, aged 29, German, weight about 130 lb., had lost nearly 30 lb. since the beginning of the present illness.

Family history: good until beginning of present illness, which began two years ago by a gradual growth in the right pelvis, which later formed a mass rising above the right iliac crest.

Symptoms: loss of flesh, pain in the right iliac fossa, back, and below ribs on right side.

Physical examination: This revealed a cyst-like mass, apparently extraperitoneal extending from above the right iliac crest into the pelvis, following the inner surface of the ilium near the sacro-iliac junction. This mass fluctuated somewhat. The right kidney was prolapsed, and rested upon the upper surface of the mass. Its weight and irritation increased the pain. The organ was also quite tender and enlarged some. Pressure upon the tumor mass caused some pains. Certain motions of the body, such as lateral flexion of the trunk upon the pelvis, caused a pain and a grating sensation at times, which was only perceptible to the patient. The erect position increased the backache, dragging sensation, and weight near tumor on account of kidney. The recumbent posture was more comfortable.

Diagnosis.—Extraperitoneal cyst, or disease of the sacro-iliac synchondrosis, with exudate and prolapsed kidney.

The urine was normal, the blood examination gave a white count 7,000, and the hemoglobin was 78 per cent.

Operation.—An incision above the crest of the right ilium opened into the cavity of the tumor mass, which was filled with a thick gelatinous, cheesy substance, serum, blood, and some pus, and also a few spiculæ of bone.

The cavity contained about 20 ozs. of substance. It was emptied, washed, and cauterized with carbolic acid. The cavity was then thoroughly curetted and packed. In seven weeks' time the cavity had closed up with a small mass of granulation-tissue to mark its former location.

This was probably a case of sacro-iliac disease associated with kidney prolapse. An examination of the contents determined very little. No tubercular bacilli were found, but various bacteria were discovered, and some pus, and blood-cells, and serum. The patient for a time complained of a grating noise in the back and side upon certain motions. This has now entirely disappeared. The kidney continued to give trouble, and remained prolapsed, and caused some dragging pains and backache, but otherwise the patient seems well.

Case 4.—Miss L——, aged 19, tall and slim. Family history, good; personal history and habits of no consequence. Present illness: For two years she has had a considerable backache, general malaise, unable to work, and has spent a great deal of time up to the time of the operation. She has complained of some shortness of breath, and has lost considerable flesh.

An examination revealed the right kidney prolapsed to the 3d degree. The urine was scanty, and contained hyalin casts and considerable albumen and pus; all other organs seemed to be in a normal condition. A nephropexy was performed. The fatty capsule was dissected loose, and puckered up beneath the lower pole. The fibrous capsule was dissected in a longitudinal direction, making two flaps an inch and a quarter in width attached to either pole of the kidney. These flaps were brought up between the fibers of the quadratus lumborum muscles, and stitched with chromicized catgut. By this method a good deal of kidney substance was exposed, so that union might occur between the peritoneum and the kidney. (See Fig. 2.)

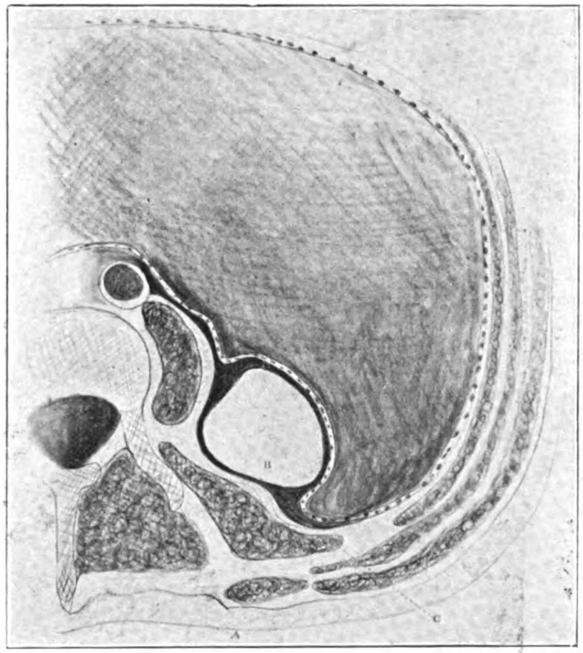


Fig. 2.

A—Point at which incision is made down to kidney B. C—Quadratus lumborum through which the incision is made, and where fibrous flaps are anchored.

This case made an uneventful recovery, and albumen has seldom been found in the urine since the operation, and then only in small quantities. The urine passed before operation averaged about 16 to 18 ozs. in 24 hours, and since the operation the patient passes from 30 to 36 ozs. daily. The extreme prolapse and the interference with the normal flow of urine probably brought about the nephritis in this case. The elevation of the kidney to near the normal circulatory level, and the anastomosis of kidney-substance with the abdominal wall were instrumental in bringing about what is apparently a cure.

CASE 5.—Mrs. S——, American, aged 31, no children. Family history, good. Personal history: typhoid fever 14 years previous with phlebitis following nervous prostration two and a half years ago. The chief symptoms were continual dull pain in region of right kidney, radiating toward navel and down toward right iliac region. Sick headaches were frequently experienced, and backache was also complained of. The physical examination revealed the right kidney prolapsed to the 3d degree and very tender; uterus retroflexed, but freely movable; some prolapse of tubes and ovaries.

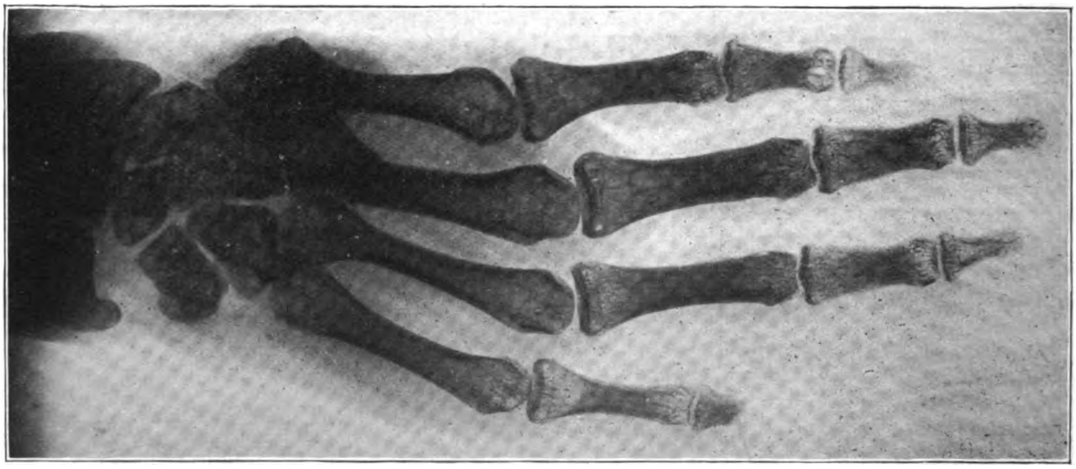
OPERATION.—Nephropexy, according to method described in case No. 4. An Alexander's operation was also performed, as the uterus was easily brought up into normal position, and there seemed to be no pelvic lesion demanding a laparotomy.

During the convalesence period, it was noticed that the patient had considerable pain in the right pelvis at times. These attacks were followed by the expulsion of a quantity of mucus, which evidently collected in the cecum and descending colon. Relief was experienced after the evacuation of this collection. Colon flushes and intestinal antiseptics were employed. The patient steadily improved, but there would occasionally occur attacks of pain with the expulsion of a quantity of mucus. A sick headache usually accompanied these attacks. Two months after leaving the hospital the patient began to complain of dysmenorrhea, and pain in the right tube and a month or so later the left side began to give trouble. The appendix seemed quite tender upon pressure. An examination showed undoubted tubal disease. The ovaries were enlarged and prolapsed; the right tube greatly thickened and adherent; and the left to a less degree.

Six months after the first operation, a laparotomy was performed. The appendix presented evidences of a chronic inflammation, and was removed. The outer half of the right tube was cystic and adherent. The ovary was also cystic and otherwise diseased and adherent. This ovary and tube were removed. The left tube was also cystic at its outer one-third, and somewhat adherent. It was resected. The ovary being cystic and enlarged, was resected.

The patient made steady improvement. By proper diet, regulation of bowels, and the employment of intestinal antiseptics and irrigations, the mucoid colitis has gradually improved, and the patient soon gained 20 lb. She rarely complains now, and that mainly of an occasional headache, due usually to indiscretion in diet.

This case was of especial interest on account of the mucoid colitis, which is frequently associated with prolapsed kidney.



IN THE SERVICE OF DR. W. E. ROCHFORD

The above plate shows the result of a gunshot wound which occurred in a boy about 15 years old. The *x*-ray was taken of the hand six years later. The thumb was completely shattered and severed from the hand, and a portion of the little finger was shot off.

The patient has recovered with a good and useful hand minus the thumb.

CLINICAL MICROSCOPY

HEMATOZOA IN "SPOTTED FEVER"

Spotted fever is a disease with the prodromal symptoms of influenza or typhoid fever, and occurs in the spring months in certain mountainous districts of Montana. The symptoms are pain in the back or limbs, headache, muscular soreness, and a chill followed by fever and mental apathy. On the third day after the chill a rash appears upon the extremities which becomes petechial in character. Drs. Wilson and Chowning (Journal of Infectious Diseases, Jan. 2, 1904) describe a protozoan organism in the red-blood corpuscles of infected persons which they believe to be the cause of this disease. The parasites were found in the fresh blood by examination with the 1-12 oil immersion lense, and also in cover-slip smears when stained with methylene-blue stains.

They describe (a) small hyalin forms often seen in pairs,—four, six, eight, or twelve of these parasites may be seen in one red cell,—(b) larger ovoidal forms, which are actively ameboid. The organism is classed as a hemocytozoön, and given the name of "pyroplasmosis hominis."

This is not the first published work of Drs. Wilson and Chowning upon these parasites, and we are gratified to note that their later observations confirm their earlier and necessarily less systematic work.

Red-blood corpuscles present so many endoglobular phenomena, such as changes due to crenation, degeneration areas of Maragliano with active ameboid movements, etc., the profession should be slow to accept observations purporting to describe new parasites in red-blood corpuscles.

One of the supreme tests for parasites in red-blood cells is that they can be stained, and by staining a differentiation in their structure can be clearly made out. This Drs. Wilson and Chowning have done, and their illustrations clearly show the presence of endoglobular bodies within the red-blood corpuscles, certainly not artefacts or degeneration areas, but organized living parasites. Parasites similar to those found in the red-blood corpuscles of persons with "spotted fever" were also found in the red-blood cells of many spermophiles in this particular region. It is the theory of the writers that the "pyroplasmosis hominis" is conveyed from the spermophiles to infected persons by the bites of ticks.

It is a matter for congratulation that this important work should have been done by medical men living in our midst.

A GOOD BLOOD-STAIN

Much difficulty has been experienced by every one who does blood-work in finding a reliable tri-acid stain. The writer can recommend the following formula for making the tri-acid stain:

(a) Make saturated aqueous solutions of orange G, methylgreen, and acid fuchsin.

(b) To 6.5 c. c. of acid fuchsin solution add 2 c. c. of distilled water; mix thoroughly, add 6 c. c. of orange G solution and mix thoroughly. Then add 6.5 c. c. of methyl-green solution, drop by drop, stirring thoroughly after adding each drop. Now add 10 c. c. of distilled water, and finally 5 c. c. of absolute alcohol. Allow this to stand for two weeks in a strong light, and the stain is ready for use.

This stain will keep indefinitely. The blood smears having been fixed by heat are stained for five minutes, washed in distilled water, dried, and mounted in balsam.

THE SEDIMENTATION OF URINE

For some years two methods have been in use for the sedimentation of urine: the so-called conical glass method, in which the urine is poured into conical glasses and allowed to stand until a sediment forms; and the centrifugal-machine method, which produces a sediment in glass tubes rapidly revolved at a high rate of speed.

The most that can be said for the centrifugal method is that it saves time. One serious drawback that we have noted in its use, is that the rapid motion often breaks the casts, especially delicate blood and granular casts, sometimes also epithelial and leucocyte casts.

In a number of specimens of urine we have found casts in sediments secured by the conical-glass method where none, or only broken pieces of casts, were seen in the sediments produced by the centrifugal machine.

Where an immediate sedimentation of the urine is not necessary the conical-glass method is, therefore, the most trustworthy and is to be recommended.

Geo. Douglass Head, M. D.

NORTHWESTERN LANCET
A SEMIMONTHLY MEDICAL JOURNAL
The Official Organ of the Hennepin County Medical Society
W. A. Jones, M. D.................Editor
Editorial Office, 515 Pillsbury Building
W. L. Klein, Publisher

SUBSCRIPTION, $2.00 A YEAR.

839-840 Lumber Exchange....................Minneapolis

MARCH 1, 1904

DR. TYSON TO ADDRESS THE HENNEPIN COUNTY MEDICAL SOCIETY

Dr. James Tyson, of Philadelphia, has accepted the invitation of the Hennepin County Medical Society to deliver an address at the society's annual banquet, to be held Monday evening, April 4th. The subject of Dr. Tyson's address is "Hospital Organization."

The profession of the State is to be congratulated on its opportunity to hear one of its most distinguished men.

Details of the meeting will be given in our next issue.

DR. LUDVIG HEKTOEN'S ADDRESS

The address delivered by Dr. Hektoen before the Minneapolis Pathological Society, and printed in this issue of The Lancet, will be read with pleasure and profit. The society is to be congratulated upon the success of the meeting. The pathological laboratory was filled with out-of-town visitors, members of medical societies, and medical students, who listened to the lecturer in his well-known, clear exposition of his subject.

Dr. Hektoen is the director of the McCormick Memorial Institute for Infectious Diseases in Chicago, and holds a professorship in the medical department of the Chicago University. His manner and address are characteristic of the man, unassuming, clear-cut, direct and forceful. His training and his opportunities for observation in original work are the key note of his success as a teacher. He presented much that was new in his address on bacteriology, and made one feel that his science is destined to clear away many of the perplexing problems in clinical medicine, and to assist the clinician in the early diagnosis of infectious diseases. The first number of the Journal of Infectious Diseases, of which Dr. Hektoen is editor-in-chief, was published in January of the current year, and will take first place among the scientific publications of the day. It is issued by the Institute, and should be in every library of medical men, or at least in all libraries of medical societies..

DEATH OF DR. FRANKLIN STAPLES

Dr. Franklin Staples, of Winona, died at his home February 22.

Dr. Staples was a gentleman of the old school, and a man well known and beloved throughout the state for his courtly bearing, scholarly attainments, and professional ability. For many years he has been a member of the State Board of Health, and was its president at the time of his death.

He was a frequent contributor to The Lancet and other medical journals. His articles were upon varied topics, including historical medicine, and were widely read and quoted. Dr. Staples was a successful physician, and a celebrated consultant.

For many years he has been an invalid, yet in spite of his infirmities he has usually attended the meetings of the State Board of Health and the various medical societies of which he was a member. In his death the state loses a valuable advisor, and the city of Winona a prominent citizen and physician.

Dr. Staples graduated from the College of Physicians and Surgeons, in the city of New York, in 1862.

HOME FOR INCURABLES

A prominent and wealthy citizen of Minneapolis, Mr. W. H. Dunwoody, has offered to the city of Minneapolis a piece of ground upon which a building for incurables may be erected. Here is an opportunity for some one to erect a lasting monument. A building of suitable size can be erected for a moderate sum, between forty and sixty thousand dollars, which will accommodate a large number of helpless and dependent people. Such an institution would be a blessing to thousands.

Institutions for incurables are needed in every large city to relieve the city and other general hospitals from the care of indigents. The old, the infirm, paralytics, and the mentally enfeebled cannot be properly looked after in general hospitals without sacrificing the care of acute cases. The records of hospitals of this kind show clearly the necessity of special buildings for the care of the helpless. One familiar with this line of philanthropy can appreciate the good that can be accomplished in the housing of incurable cases. The study of the needs of the senile, and of diseases which lead to helplessness, is not sufficiently understood. Much can be done to mitigate suffering, to relieve apparently hopeless cases, and temporarily to build up these old people. The conditions which frequently bring about helplessness and chronicity can be modified to an extent that is surprising, and a few of these cases can be returned to their homes in fairly good health, able to resume their places in the family without creating discord and discomfort, an unfortunate state which many of the aged and helpless reach simply for lack of immediate aid.

THE LANCET is of the opinion that the man who will provide for this pressing emergency will do more for humanity than all the educational and charitable organizations that have recently been promoted. It will relieve a congestion that is overwhelming, and provide comfort and assistance to a needy class, as well as make room for organizations that are willing to assist the sick and poor of other classes.

REPORTS OF SOCIETIES

MINNESOTA ACADEMY OF MEDICINE

ARTHUR W. DUNNING, M. D., SEC'Y

The regular meeting of the Academy was held at the Ryan Hotel Wednesday evening, February 3d, the president, Dr. Wm. Davis, in the chair, and there were twenty-seven members present. Dr. A. C. Heath and Dr. W. R. Ramsey were elected to active membership.

Dr. Frank C. Todd, of Minneapolis, reported the case of a woman, aged 55 years, who died from endogenous infection. She came to him after having suffered from la grippe and a suppurating middle ear for one week. At the time she had severe eye trouble, which had been diagnosed by others as iritis, and later as glaucoma. There had been great swelling and pain, and it became necessary to enucleate the eye. She did well for a few days following the operation, when she developed septic fever, and died thirteen days after the operation from septic endocarditis. Dr. Todd showed the eye nicely sectioned and mounted.

Dr. A. Shimonek, of St. Paul, reported an extremely large calculus removed from the bladder of a man of 75 years of age. He was making operation for the removal of an enlarged prostate, and discovered the stone, which had previously escaped detection because of its high position and fixation in the bladder. A great deal of difficulty was experienced in removing it through the perineal opening because of the want of the proper instruments for the purpose. With a strong small volsella forceps, however, he succeeded in accomplishing its removal. The doctor believes it to be a uric acid stone. The patient has made an uninterrupted recovery.

Dr. A. E. Benjamin, of Minneapolis, reported a case of gall-stone operated upon under local anesthesia. A 2-per cent solution of cocain was used until the gall-bladder was reached, when a small amount of chloroform was used. Two hundred and seventy-four gall-stones were removed, but evidently one or two escaped, as there was some obstruction of the common duct, and the patient vomited bile. The case is now doing well.

Dr. A. W. Abbott, of Minneapolis, read a paper entitled "Iodized Catgut."

Dr. J. L. Rothrock, of St. Paul, said, in discussion, that the use of an antiseptic for the preparation of catgut is a reversion to old methods. There is no doubt but that this method gave some good results. More recent methods, however, have been the process of sterilization by dry heat. It is a question whether catgut can be rendered antiseptic. The chief recommendation for this method is the ease of preparation and the strength of material. We must take into consideration the possibility of contamination of the suture from the skin or the hands.

Dr. W. M. Chowning, of Minneapolis, stated that he had made some bacteriological and microscopic examinations of Dr. Abbott's sutures, and found the results very favorable to that material as compared with other kinds.

Dr. W. A. Dennis, of St. Paul, asked whether the sterilization by this process is due to iodin or to heat. The appearance of the sample here would indicate that the iodin is on the outside only, and does not penetrate the catgut.

Dr. J. E. Moore, of Minneapolis, said that in his hands the sutures sterilized by dry heat had been most satisfactory. He thought Dr. Rothrock had touched the keynote in his remark on the amount of tension put upon the suture. In tying a vessel it is not necessary to cut the inner coat, as was formerly taught. Many stitch abscesses are due to necrocis of the tissue caused by too great tension upon the suture.

Dr. Benjamin spoke of the importance of becoming accustomed to any particular material. We soon learn to put the proper amount of tension upon the material we are accustomed to use. On making a change, however, we are apt to vary the tension. He is pleased with the method of dry heat sterilization.

Dr. Abbott, in closing, said it is not his purpose to quarrel with other methods of preparing sutures, but he claims that by this method one does it himself, and therefore feels more certain of his results. By any method of ready sterilization the materials are apt to be kicked about in dirty satchels and may become infected. In answer to Dr. Rothrock he said that he had seen no tumefaction or induration about the stitches. In answer to Dr. Dennis he said the iodin does penetrate equally all through the catgut. He then asked if this does inhibit the development of spores, why is it not just as good as dry heat sterilization?

Dr. Alex R. Colvin then read his inaugural thesis, entitled "Adduction in Diseases and Injuries of the Hip."

Dr. J. E. Moore, of Minneapolis, said, in discussion, that he was very much interested in the examination of cases brought for lame hips in which the lameness is difficult to locate. He illustrated how a patient will unconsciously overcome a tendency to adduction, or even the shortening of a limb by tilting the pelvis. He spoke also of the fact that fracture of the neck of the femur can be successfully treated. By a careful reduction and, then by a weight and pulley applied to the foot, and another applied to the upper part of the thigh so as to pull upward and outward, the position is so maintained that successful results will follow.

Dr. Colvin, in closing, referred to the case called to his attention by Dr. A. Henderson, of Merriam Park. A woman, 70 years old, who suffered fracture of the neck of the femur, and made a complete recovery. He spoke of the hysterical holding of the hips in strong adduction and rotation. He thought that in spite of any treatment some fractured thighs will not unite. It has been demonstrated by operation, however, that many of those that are properly treated do unite.

BOOK NOTICES

ROGER ON INFECTIOUS DISEASES. Their Etiology, Diagnosis and Treatment. By G. H. Roger, Professor Extraordinary in the Faculty of Medicine of Paris, etc., translated by M. S. Gabriel, M. D., New York. In one octavo volume, of 864 pages, with 43 illustrations. Cloth $5.75, net. Lea Brothers & Co., Philadelphia and New York.

This book comes as a pleasant discovery. The first introduction of M. Roger, the distinguished Paris pathologist and clinician, to Northwestern readers was a notice in these columns of his illuminating "Introduction to the Study of Medicine."

These 800 pages on the infectious diseases are by no tyro. One feels on every page the motive force to be a wise intelligence and ripe scholarship, clarifying, unifying, and strengthening the knowledge of the reader. In a rapid reading of the book, lingering here and there as one perforce must, the reviewer has caught the note of enthusiasm for his author betrayed in his preface by the translator, Dr. Gabriel.

This is a book every physician and surgeon can well afford to save his quarters to possess, and his odd moments to be possessed by.

The author opens with some 60 pages of general consideration on microbes—the weeds of disease—touched with French clearness. Then follow some interesting chapters on modes of infection, portals of entrance, and the protective resistance of the organism, all generalizations being accompanied by citation of experiment and experimenter that leaves the reader with a comfortable feeling of certitude.

The long chapter on suppuration, pyemia, septicemia, and nodular infections might well serve as a foundation study to a course of surgery. Some observations on experimental appendicitis and on variola are interesting. Apropos of the latter, the translator could have added to advantage a note covering the recent work of Councilman. There is valuable reading on the effects of infections on the body as a whole and upon the organs in detail. Space forbids, nor is a minute review of the 200 pages devoted to treatment desirable. They should be studied carefully for one's self.

We believe polyglot drug-giving should be discouraged and a more discriminating therapeusis inaugurated.

We have had no opportunity to compare this volume of English with the original, but we judge the translation to be well done. It reads smoothly and easily, without hitch or idiom, although ancient for *ancien* makes the doctor too old by half.

The publisher and printer have done their work well. The black-faced headings of paragraphs are a convenience. A fine index closes the volume. We expect to recur to this book for study.

THE PRACTICAL MEDICINE SERIES OF YEAR BOOKS. Under general editorial charge of Gustavus P. Head, M. D., Professor of Laryngology, Chicago Post-Graduate Medical School, etc. Vol. III, The Eye, Ear, Nose, and Throat. Edited by Casey A. Wood, C. M., M. D., Professor of Clinical Ophthalmology, Medical Department University of Illinois, etc.; Albert H. Andrews, M. D., Professor of Otology, Chicago Post-Graduate Medical School, etc.; and T. Melville Hardie, A. M., M. D., Clinical Professor of Laryngology, Rhinology, and Otology, Medical Department University of Illinois, etc. The Year Book Publishers, 40 Dearborn st., Chicago. This single vol. $1.50; entire series, 10 volumes, $7.50.

The December number of the Practical Medicine Series contains an abstract of much of the matter presented during the past year upon the eye, ear, nose, and throat. The edition upon the eye by Casey A. Wood is especially well selected and abstracted. The same may be said of the ear, nose, and throat. It is doubtless difficult for the editors, in a volume of such limited size, to include all of the good material that is published upon these subjects during the year.

The reviewer was surprised to find no mention of the method of removal of tonsils with Dr. Robertson's scissors devised by him for this purpose, and described in an article by Dr. Robertson which seems to have been one of the most important contributions upon this subject during the year. Possibly this was published too late in the year to be included in this volume; however, the selections have been first-class, and the abstracts, while condensed, give a sufficiently full description of each subject to enable the reader to secure a comprehensive idea.

The reviewer is told by those better able to judge that the other volumes of this series are equally as good, especially that upon medicine, edited by Dr. Billings. He believes the Year Book to be a most valuable series for practical men who desire to review the work of the past year in medicine.

NEWS ITEMS

Dr. C. E. McReynolds expects to locate at McHenry, N. D.

Dr. J. V. Quick, of Wahpeton, N. D., has moved to Minneapolis.

Dr. F. W. Greene, of New Richland, contemplates removal to Waterville.

Dr. Skelcey has given up practice at Page, N. D., and will locate in Minnesota.

Dr. J. G. Chichester, a graduate of Northwestern, will locate in Redfield, S. D.

Dr. C. D. Harrington, of Scanlon, is in Chicago, doing special work in surgery.

Dr. H. A. Peabody, of Webster, S. D., is doing post-graduate work in Philadelphia.

Dr. A. M. Crandall, who is doing post-graduate work at Chicago, will locate at Rochester.

Dr. J. F. Lynn, of Waseca, was married last month to Miss Jessie R. Helms, of Fargo, N. D.

The local paper of White Earth, N. D., reports a good opening for a physician in that place.

Dr. Wm. Jacoby, who has been practicing in Mankato for several years, has moved to Lake Crystal.

Dr. Charles P. Spottswood, of Hankinson, N. D., has gone to New Orleans for special work in surgery.

The citizens of Aitken want a hospital in that place, and a stock company to build one is soon to be organized.

The Sanitarium of Faribault has been closed, and its manager, Dr. C. C. Donaldson, has moved to Denver, Colo.

Dr. J. J. McKinnon, of Wadena, has asked the village council for an appropriation to assist in building a hospital.

Dr. H. L. Lamb, of Sauk Center, who has been studying in the hospitals of Chicago, has returned to his practice.

Dr. H. O. Hagen has begun practice in New Richland. Dr. Hagen is a recent graduate from a Chicago medical college.

Dr. William Scanlan, of Page, N. D., has returned from New York where he has been taking a post-graduate course.

Dr. McKenty, of Neche, N. D., was in the Great Northern wreck at Benson last month, and sustained a fractured rib.

Dr. S. D. Sour, of New Ulm, has moved to Redwood Falls to take the practice of Dr. Dr. Sour is a Hamline graduate.

Dr. C. A. Warmer, of Drayton, N. D., has moved to Petersburg, in the same state. Dr Warmer is a graduate of Ann Arbor.

Dr. H. E. Schlegel, of Redwood Falls, is taking a post-graduate course in Chicago, and has decided to move to the Pacific Coast.

Dr. R. V. Williams, a recent graduate of Rush, has located at Rushford, and will take up the practice of the late Dr. H. S. Vernon.

Dr. James Grassick, of Buxton, N. D., has gone to Europe for special study. His practice will be taken by Dr. Marsden, of Hoople, N. D.

The Catholic convent, at Lewiston, Montana, will be converted into a hospital this summer, to replace the small building now used as a hospital.

Dr. Franklin Staples, of Winona, one of the oldest practitioners in Minnesota, died last week. Further mention of Dr. Staples is made in our editoiral columns.

Dr. W. E. Belt, of Redwood Falls, has moved to Dodge Center, and will occupy the office of the late Dr. Ranson. Dr. Belt is a graduate of the State University, class of '89.

Dr. T. C. Clark, of Stillwater, has been appointed a member of the committee of organization of the International Congress of Military Surgeons to be held at the St. Louis exposition.

Dr. Ludwig Platou, of Valley City, N. D., has let the contracts for his new hospital building, which will cost about $25,000, and, it is said, it will be the finest private hospital building in the state.

Dr. F. W. Wilcox, of West Newton, Mass., has been appointed to the position of assistant superintendent of the State Insane Hospital at Fergus Falls, to succeed Dr. Harry Pollock, who goes to Connecticut.

Dr. A. T. Mann, of this city, will start for Europe next month to spend four months investigating new methods in surgical work. He goes first to Vienna, and will visit the schools and hospitals of Germany and Switzerland.

A recent news item in these columns stating that Dr. F. T. Poehler, of Minneapolis, would remove to North Dakota, was a mistake. It was Dr. F. C. Poehler, of Washington, who has located at Heried, a new town in N. D.

The physicians of Morrison County met at Little Falls last month, and organized the Morrison County Medical Society, electing the following officers: President, Dr. J. G. Millspaugh; vice-president, Dr. O. C. Trace; secretary, Dr. E. E. Hall; treasurer, Dr. G. M. A. Fortier, all of Little Falls.

The Cass Lake Hospital Association has purchased the hotel property at that place, and will alter it so as to make an excellent hospital building. It is a three story building, well constructed and in every way adapted to hospital use with the slight changes that will be made. Senator J. D. Jones is president of the association.

The Rice County physicians have issued the following schedule of prices, to which all the physicians of Faribault attached their names: Office consultation, $1.00 to $5.00; ordinary day visits, $1.50; night visits, $2.00 to $3.00; mileage, day time, first 6 miles, $1.00; all over 6 miles, 50 cents; night mileage, 25 per cent additional; ordinary obstetric cases $15.00 to $25.00; over 6 hours detention, per hour, $1.00; miscarriage cases, $10.00.

SANATORIUM FOR SALE

Owing to the death of Dr. Sam C. Johnson, the Sanatorium at Hudson, Wis., is for sale by the administrator of Dr. Johnson's estate. The property is beautifully located on the bank of Lake Mallilieu, and is within the city limits. The building is steam-heated, electric-lighted, and supplied with modern appliances and apparatus. It has been very successful for a number of years, and will return a large interest on the money invested. Its location is so near the Twin Cities, and so far from a like institution, it need never lack for patients. It can be bought for a very low price, and to a satisfactory purchaser, reasonable terms will be given. For further information, address or call upon

Wm. H. Phipps, Special Administrator.
Hudson, Wis.

NORTHWESTERN LANCET

A Semimonthly Medical Journal

VOL. XXIV MARCH 15, 1904 No. 6

PHYSICAL AND CHEMICAL FORCES IN VITAL OPERATIONS*

BY CHARLES F. DIGHT, M. D.

Professor of Physiology and Histology, Hamline University; Formerly Professor of the Practice of Medicine and Hygiene in the American Medical College at Beirut, Syria, and Attending Physician to the Prussian Hospital, Beirut

MINNEAPOLIS

Not many years ago it was thought that all physiological processes that occur in man, were due to the operation within him of a special life principle. It was believed that this life principle or vital force, was a distinct force in nature, separate from other forces, just as gravitation is a distinct force in nature, or just as electricity is a force in nature separate and distinct, as it seems to be, from other forces. It was thought, accordingly, that anything that lived, was alive because it was permeated by this vital force, and so long as the force remained in the thing it remained alive, but when the vital force left it, it ceased to live and became dead. The presence of this force was scarcely questioned although it could not be detected by any of our special senses or otherwise be demonstrated to exist.

This theory was called *vitalism,* and its adherents *vitalists.* The time came, however, when scientists discovered that certain physical and chemical forces are constantly operating within the human body, and that many of the processes carried on therein, are the outcome of the action of these commonplace physical and chemical forces. Thus the production of heat within our bodies, the production of carbon dioxide gas, of urea, and other substances, and their excretion from the body, are the results, pure and simple, of the operation of physical and chemical forces, as will be demonstrated in a few moments for certain of these processes. So many, indeed, of the phenomena of life have been thus explained that some physiologists have come to believe that all functions and that life itself are simply the result of the operation within us of the same forces, physical and chemical, as are constantly operating in the inorganic world about us, and that no such force as a special life or vital force exists in nature. Whether this be true or not the belief that life emanates from physical and chemical causes, is likely to prompt to more investigation of what life is than would be made under the belief that it is a distinct and mysterious force.

When, however, we think of the mysteries of life, of thought, memory, desire, volition, and other varied mental operations—when we think of the complex changes that attend the development of a microscopic cell, almost homogeneous in structure to begin with, until it has assumed the proper form of the young animal, as occurs in reproduction, it is difficult to conceive how all this can come about by the operation of simple physical and chemical forces.

Some physiologists are inclined, therefore, to return to the acceptance again of vitalism; and while they freely admit that physical and chemical forces operate in man, and explain many of the processes taking place within him, yet they believe that behind these forces, controlling and directing them, is another force to which we can give no better name than *vital* force, and without which life cannot exist. This mystery—life, in other words—is hidden away in the individual cells that compose our bodies, for each cell is a living thing, and in certain emeba the living protoplasm of that unicellular organism seems really to be endowed with psychic powers, although but a microscopic mass of almost homogeneous matter.

---

*Read before the Physicians' and Surgeons' Club of Minneapolis.

It is impossible to explain all vital phenomena by the help of physics and chemistry alone, nor by these assisted by anatomy and histology. When these have reached their limit they fail to explain life, the human will, the property of irritability, the heart's beat, and how it is that one single spermatozoön, five hundred millions of which would hardly occupy a cubic millimeter, can transmit all the physical qualities from father to son; or, even skipping the son, may again, by the agency of one single cell, re-appear in the grandson. "If this is really a mechanical process, how wonderful must be the molecular structure, how complicated the interchange of forces, how intricate the forms of motion, in this small cell, which shall direct all subsequent forms of motion and the mode of development for generations; and how shall this minute structure transmit mental qualities?" Here we seem utterly abandoned by physics, chemistry, and anatomy as we know them now. Microscopes of higher power may bring out new and more complex structures, but, unfortunately, a complex structure does not reveal the force that operates it, nor do chemistry and physics explain why life manifests itself in elements when combined in a certain way, and not when otherwise combined.

"Many centuries may pass," as Bungey expresses it, "over the human race, many a thinker's brow be furrowed, and many a giant worker be worn out ere even the first step be taken towards the solution of this problem. And yet it is quite conceivable that a sudden flash of light may illuminate the darkness. We are loath to believe that science has impassable bounds, or that anything can permanently stop its victorious career, not even the present limitations of man's intellect, for this, too, is capable of being made more perfect. There is no rational ground for thinking that the continuous progression, development, and ennoblement of type, which has been going on for centuries on this planet, should come to an end with us. There was a time when the only living creatures were the infusoria floating in the primeval sea, and the time may come when a race may dominate this globe as superior to ourselves in intellectual faculties as we are to the infusoria."

FILTRATION

Physical and chemical forces do, however, account for many processes that occur in man; and to filtration, as one of these, I want first to call attention.

If the interior of a bucket or earthen jar be divided into two compartments by a closely-fitting porous septum placed vertically, and one side only be filled with water, the water will filter through the septum, because the water pressure on the one side is greater than the air pressure on the other, and the filtration continues until the water has the same level on both sides of the septum. In like manner in our bodies, the blood in the capillaries, being under considerable pressure from the heart-beats behind it, exerts a greater pressure outwards than the surrounding fluids in the lymph spaces exert in the opposite direction, and consequently a continuous filtration (transudation) of plasma goes on through the capillary walls to the surrounding tissue-cells, which are thus supplied with food. Any excess of lymph not used by the cells again passes by filtration into the lymphatic vessels, and flows away, because the preponderance of pressure here is into, rather than out of, the lymphatics.

The excretion of urine is largely by filtration, for the water and salts, with at least some of the urea, get into the uriniferous tubules and drain away, because the pressure there is less than in the blood-vessels that surround the tubules and are invaginated into them. In this way digitalis, by increasing arterial tension and filtration, acts as a diuretic.

OSMOSIS

These processes of filtration are too well understood to require more than simple mention. As purely physical processes they sustain life and function in every tissue. The same is true of the physical process of osmosis. If two chambers again be separated by a porous septum, and both filled to the same level, one with pure water and the other with brine, the pure water, being a thinner fluid than the brine, passes so much more rapidly into the brine than does the brine in the other way, that the brine, though a heavier column of fluid than the pure water, rises in height and the pure water, which is a lighter column, lowers its height. This process is known as osmosis, and it continues until both fluids are equally briny, and have therefore the same density and specific gravity, whereupon filtration takes place and the two fluids soon come to a common level. Fluids of different densities and specific gravities, because of an unequal number of molecules of salts in solution, exert different degrees of osmotic pressure both in and out of our bodies, and the direction of greatest flow of fluid under osmosis is from the less dense fluid to the more dense. In this way, as well as by filtration, fluids pass through the walls of the capillaries and lymphatics, and into and out of the cells. Osmosis explains to a large extent the absorption of digested food, for the fluid of the chyle is less dense than the blood, and consequently passes into it.

On the other hand, a cathartic dose of magnesium sulphate causes a flow of fluid in the other way, because a dose of epsom salts makes the intestinal contents more dense than the blood; hence the hydragogue effect. The water ot mineral springs that carry much salts in solution produce catharsis in a similar way, i. e., by osmosis.

DIFFUSION

We often forget, perhaps, the important place which the physical process of diffusion of gases takes in sustaining life. We know that oxygen gas to the amount of 1½ lb. enters the blood of the average person daily, and about 1¾ lb. of carbon dioxide gas escapes. The oxygen, taken by diffusion into the blood at the lungs, jumps upon and rides a red-blood corpuscle, somewhat as you do a street car, until the systemic capillaries are reached, and there it parts company from the corpuscle, and by diffusion again passes through the capillary walls to the surrounding tissue cells. From these same cells carbon dioxide gas passes by diffusion in the other direction,—through the capillary walls into the blood,—and is carried to the lungs, and, by diffusion, is excreted. If these simple physical processes of diffusion be arrested at any time for only a few moments life ceases.

The law that operates in diffusion of gases is, that they pass from where there is more to where there is least, seeking an even distribution.

Although we know that the entrance of oxygen into the venous blood in the lungs changes it from a dark-blue color to red, we perhaps do not always think of this as a purely physical and chemical procedure, the entrance of oxygen into the blood being a physical process, the change of color a chemical one, just as when I shake this dark venous blood with the air in this test-tube, the blood, as you see, becomes bright red by oxygenation.

If the lungs from a dead animal be removed, and dark venous blood be passed through the pulmonary arteries (the lungs being filled with oxygen gas) the blood will escape bright-red in color from the pulmonary veins, oxygenation of it having taken place just as in life. Apropos to this let me say that twenty-five years before Dr. Harvey, who discovered the circulation of blood, was born, a Spaniard, Servetus, discovered that the blood passed from the right side of the heart to the left side through the lungs, and that in so doing it changed color. A few years later this same Servetus was burned at the stake in Geneva at the instigation principally of John Calvin.

That gases do really diffuse through the pulmonary tissue, and of course through other tissues also, you see demonstrated in this dead lung, for when I pass this sulphuretted hydrogen water into the pulmonary artery, in the direction of the natural flow of the venous blood, the sulphuretted hydrogen gas escapes from the trachea in free volume as does carbon dioxide during life. It can be smelled, and, you see, it blackens this lead paper held at the opening of the trachea, this being the test for sulphuretted hydrogen—the blackening of a paper wet with acetate of lead solution. If a hog's bladder be tied over the large end of a glass funnel, like this, and sulphuretted hydrogen water be poured inside the funnel, as you see me do, and the neck of the funnel be corked, the gas diffuses through the bladder, and again blackens the lead paper exposed to it. This bladder is perhaps thirty times as thick as the walls of our air-sacks and our blood capillaries. This suggests the ease with which oxygen, carbon dioxide, and other gases will diffuse throughout our bodies. The fact is that physical and chemical forces are acting all the time and everywhere within us.

Now, the series of functions which attend the cycle of life and activity in a cell or in man are in a broad sense these:

1. The introduction of food. 2. Its digestion, and absorption into the blood in case of man. 3. The change of this absorbed food into the natural blood ingredients. 4. The taking of these into the body cells, which cells build the ingredients up into living cell substance. 5. The functioning of this living cell substance, which causes (6) Its disintegration and the production of waste matters thereby. 7. The excretion of these waste matters.

These processes embrace the whole life cycle from the ovum in the ovary to the corpse in the coffin, and the performance of these life processes, with possibly the exception of two of them, seems to be presided over and executed by physical and chemical forces. Let us notice here how true this is.

Certain enzymes, or ferments, in the digestive juices, under the influence of an acid reaction in the gastric juice and of an alkaline reaction in other juices, cause an hydration of the starchy and proteid foods, and an emulsification and saponification of the fats, thus changing the food so that it can be absorbed into the blood. This is *chemical* process No. 1. The food is then absorbed by the process of osmosis and diffusion. This is *physical* process No. 1; and while we are told that the vital property of the absorbing cell comes into play here, yet osmosis and diffusion will accomplish absorption.

After absorption, or during the very act of it, the proteids of the food, which are now peptones, are changed into the natural blood proteids, and this is done seemingly by enzymes furnished by the white-blood cells, while the absorbed sugar is changed into glycogen by the hepatic cells, they furnishing an enzyme for this purpose. These changes, along with those that the absorbed fats undergo, constitute *chemical* process No. 2.

The food as blood ingredients, along with oxygen gas, is now ready to be presented to the cells of the body everywhere, which requires that the blood plasma pass through the thin walls of the systemic capillaries to reach the surrounding cells. It does this by osmosis, diffusion, and filtration, and this is *physical* process No. 2.

The outer surface of the cells are now moistened or perhaps bathed by the plasma, holding in solution the food or blood ingredients, and the cells, by a process of absorption again, imbibe the plasma, which is *physical* process No. 3.

Next occurs the step which physical and chemical forces do not explain, namely, the process by which the living cells build lifeless food materials up into living protoplasm—into living substance like themselves capable of functioning. Bridge this channel where life flows and ebbs in the cell, by physical and chemical processes that explain it, and everything but man's psychic life and the facts of reproduction can be traced to physical and chemical causes; for those changes which attend the disintegration of cell substance in the discharge of function are again chemical changes, consisting mainly of oxidation, hydration, or dehydration, while the excretion of the waste produced is accomplished by the physical forces of diffusion and filtration.

Thus we see that physical and chemical forces explain most of the vital phenomena.

Now, in those changes which take place in the food which fit it to be presented to the cells and by them built up into living substance, it is known that hydration at one place and dehydration at another are the important chemical changes that occur, and these are known to be caused by the catalytic action of the enzymes, or ferments, which the food encounters in its anabolic stages. Likewise in the catabolic stages which attend disintegration of cell substance, the changes that occur seem to be caused by enzymes. These changes are chiefly those of oxidation. It has been all along assumed that oxygen combines with carbon and other elements of disintegrating tissues, simply because the oxygen is presented to such tissue, just as oxygen unites with warm iron, when the two are brought together, because of their chemical affinity. But recent investigations have shown that there are certain enzymes, called oxydases, in many of our tissues, which, when extracted and used, will bring about oxidation in organic matter where it otherwise would not occur, and there is reason for the belief that such enzymes preside over oxidation in our bodies.

Every chemical step in the assimilation of food and the tearing down of tissue seems presided over by a special enzyme, the enzyme being that which causes the chemical change, but how it does this, is not certainly known. Some enzymes change starch to sugar, which is further changed by enzymes in the liver. Others take part in fat assimilation. Others change non-absorbable proteids into absorbable ones, and these are further acted on by other enzymes, probably from the white-blood cells.

Growth, with the exception of the one unbridged chasm, seems dependent on the presence of distinct enzymes, or ferments, at each stage. Cessation of growth and what we call growing old is probably only a series of destructive fermentations or the lessened activity of the constructive ferments.

All enzymes known, both in the animal and the vegetable kingdom, possess certain properties in common. Thus they are: 1st. All soluble in water and in glycerine. 2d. They are precipitated, and their efficiency is suspended, by alcohol. 3d. Low temperature suspends their action. 4th. In a moist condition they are coagulated and permanently destroyed at a temperature of 80° C. 5th. A remarkably small amount of any ferment is capable of causing chemical change in a relatively vast mass of a given material. 6th. Their action ceases when the products of their action accumulate about the enzyme.

Ferments, or enzymes, are the product of cell metabolism, and so is the recently discovered antiferment, whose action seems to explain, as nothing heretofore has done, why the stomach and small intestines do not digest themselves.

Bearing on this, the Scientific Review, August 15, 1903, has this to say, as quoted by the Literary Digest of September 26, 1903:

"The digestive tract is filled with ferments capable of attacking, dissolving, and altering the food contained therein; and nevertheless these ferments attack neither the intestinal walls nor the parasitic worms that often live there. Why is this? The question has often been discussed, and the recent investigations of E. Weinland on the tryptic ferment has brought it up again. About 1891 Frenzel stated his belief that the protection enjoyed by the intestinal parasites was probably due to antiferments secreted by the living tissue. An interesting experiment along these lines has been made. A mixture of fibrin and trypsin, or of pepsin, was prepared, and, after the addition of a small quantity of the juice of ascarides, it was found that no digestion of the fibrin took place. The ferment did not attack the fibrin even when no more of the juice of parasitic worms was added for an hour. It is thus not the living tissues that resist digestion, it is the juices that impregnate them, which they themselves have produced. This antiferment is very powerful; it remains active for months. It loses its properties when boiled, but heating to 60° C. for the time greatly lessens its antidigestive action. As for the nature of the active substance, it can not be characterized otherwise than by its effect on digestion. The substance exercises an inhibitory influence on digestion, hence its name of antiferment. If it is kept warm a precipitate forms, but this contains none of the active substance which remains in the liquid. It may be precipitated with alcohol. A fact worth knowing is that the ferment and the antiferment may be mixed for a long time without mutual destruction.

"The antiferment simply prevents the digestive action of the ferment; if they are separated the ferment soon exercises its specific influence. The antiferments are evidently products of cellular activity, but it is not known which part of the cell originates them. It would be very interesting to pursue further researches on antiferments, which are perhaps numerous, and of which possibly some use might be made. But aside from this, their scientific interest is more than sufficient to encourage investigation in the path opened by Messrs. Frenzel and Weinland."

Of what practical benefit this new fact may prove to be in medicine is of course speculative, but it may be found, for one thing, that certain intestinal worms have to do with causing intestinal dyspepsia by giving out from themselves, not only enough antiferment to prevent their own digestion, but enough to prevent digestion of the proteid food taken. The anemia often seen in patients infested by intestinal parasites, especially by the recently discovered "germ of laziness" in the South, which is a parasitic worm rather than a germ, may be thus explained,—non-digestion and consequently non-assimilation of food because of the antiferment. Speculation all aside, however, the experiments referred to seem to solve the problem along chemical lines, as to why the stomach and small intestines do not digest themselves,—because of antiferments which their cells may produce.

Now, just as chemical forces do much in sustaining life and health, so in disease we have come to make use of these forces in hastening the return to health. We do this in the administration of digestive ferments in cases of dyspepsia, for if these substances serve a useful purpose it is by promoting those chemical changes in food which constitute its digestion. Carrying a patient through a period of asphyxiation, or through a critical stage of pneumonia by the administration of oxygen gas, and resuscitating the drowned, are simply re-establishing chemical changes in the way of oxidation in the body which were arrested or about to be arrested; and it seems likely that the whole sum total of the good effects exerted by all our medicines is due to hastening or retarding, or otherwise modifying, the various chemical and physical processes of which the tissues are the seat. It is in this way that medicines can assist nature, but cannot themselves cure. The general public is ignorant of this, however, and attribute to medicine some specific or magic action.

Then, again, we have learned to make use of physical processes in restoring health to parts where the natural physical processes that occur in the tissues, have been impaired. Thus by tight bandaging or other pressure about a chronic ulcer or in an edematous extremity, we accelerate the natural but arrested process of diffusion and filtration in the parts, and thus remove the excess of fluids or waste matters which are there, and make way for the entrance of pure blood. We accomplish the same thing sometimes by elevating a dependent part, thus allowing gravitation to assist filtration and diffusion in overcoming edema, and hypostatic and other congestions; while by massage we may greatly accelerate or retard the physical processes, and indirectly the nutrition in any organ that can be reached. The whole system of osteopathy, which is making such strides of late, is based upon the application of external physical forces in modifying internal physical processes.

In conclusion, there is another and recent application of physical law to which I wish to call attention.

Frequent efforts have been made to warm, in some way, for people out of doors in the cold, the air they breathe before it enters their respiratory organs, and thus prevent the irritating effects which very cold air has on the membrane of the upper respiratory tract, especially noticeable in persons in whom these membranes are impaired.

In passing from a warm room out into the cold, a change of 90 degrees or more, is often experienced, as, for instance, when the inside temperature is 70° above and the outside 20° below zero. While out of doors in such an air a greater change than this is experienced about eighteen times per minute, for the air we exhale at each exhalation has a temperature of about 98°. It sweeps over the mucous membranes of the throat and nose, and then is followed by an inhalation of air 20° below zero, which means a change in temperature of 118 degrees in the air in contact with the respiratory membrane, and this change is repeated as often as we breathe. Imagine yourself undressed and your cutaneous surface swept by a blast of air of a temperature of 98°, and this alternating 18 times per minute with another blast of air 20° below zero, and what trouble can you not imagine caused by it? This extreme fluctuation in temperature, of the air used in breathing, is precisely what our upper respiratory mucous membrane is subjected to in very cold weather, and while it is better fitted by nature to resist it than is our skin, yet we all recognize the greater prevalence of colds, and the exacerbations in catarrhal troubles of the respiratory tract, in the winter season as due to this cause.

To prevent this, and so to enable phthisical patients to live more out of doors in the cold weather, through some means that would give the air inhaled a more uniform heat, has been the thought of many physicians. The practical solution of this problem, through physical laws, again, came only recently by the construction of a device that utilizes the heat of the exhaled air to warm the inhaled air. The device is called the thermal inspirator. It is a receptacle filled with aluminum gauze with many interstices through which to breathe out and in. The aluminum stores up the heat of the breath, and this heat warms the air next inhaled. It is small and light in weight, and easily adjusted; and one can work, talk, eat, or sleep with it in position. It completely prevents those sudden changes in temperature to which the respiratory membranes are exposed in passing from warm rooms out into the cold. With it one may drive through a Dakota blizzard, or may sleep on a snowbank, and probably in the coldest spot yet reached on earth it will give one for the respiratory organs a summer temperature to breathe.

SOME LOCAL TUBERCULOSES*

By J. Clark Stewart, M. D.

Professor of the Principles of Surgery, University of Minnesota

MINNEAPOLIS

Gentlemen:—

I am able to-day to show you good examples of some forms of local tuberculosis, some rare and others unfortunately only too common.

The first case is one of so-called "caries sicca," or dry tuberculosis of the shoulder-joint, a disease quite rare and often erroneously diagnosed as some form of rheumatism. This man, aged 32, a Dane, has always been well until within the past year, when without known injury his right shoulder began to be stiff, and painful on motion. This condition has persisted until the present, but the discomfort and pain on use has varied from time to time, there being periods when it gave him little trouble. His general health has been good; he has no lung trouble, has no family history of tuberculosis, nor has he been closely associated with tubercular subjects. His general appearance, as you see, is good; he is not emaciated, but looks plump and ruddy. This general good condition is quite the rule in cases having this form of tuberculosis. On comparing his shoulders you will be at once struck by the atrophy about the affected joint. The muscles seem much shrunken and even the humerus seems smaller than its fellow, and this is not merely apparent, as there is true atrophy of the head and neck of this bone.

Passive motion is free and painless within certain narrow limits, but wider motion causes pain and spasm, though the latter is not marked. Extreme motion in every direction is limited by partial ankylosis of the joint, but by moving the scapula with the arm, he is able to make most movements painlessly, except those requiring deltoid action, there being enough atrophy to prevent ordinary function of this muscle.

There is no local heat or general temperature, no swelling, no tenderness, no reflex joint spasm, no night pains,—in fact none of the characteristic symptoms of a tubercular joint, except rapid atrophy; but these cases have been proved to be tubercular by microscopic study of the tissues, there being in and about the joint a formation of dense tubercular tissue which replaces the cartilages, and as it goes on to organization and contraction it firmly embraces the head of the humerus and causes a marked tissue atrophy and also a firm fibrous ankylosis of the joint.

These cases are never complicated by cold abscess unless tuberculosis of the fascia occurs, which happens rarely. As a rule they run their course in about two and a half to three years, and result in a partly useful and non-painful joint. The treatment is purely supporting in most cases, and these cases should not be operated upon unless fascial tuberculosis occurs, as nature makes a very satisfactory cure when given sufficient time. In the case before you *x*-ray treatment has been given experimentally with very good results in hastening the process and causing early ankylosis with the cessation of pain.

---

*A surgical clinic given at the Northwestern Hospital before the Junior Class of the University of Minnesota.

This patient has another form of local tuberculosis which is equally interesting, but not so rare as his shoulder lesion,—a tubercular tendosynovitis of the flexor tendons of the right wrist, which has come on insidiously since the caries sicca developed.

There have been no symptoms except the presence of the swelling and some stiffness of the fingers, but an examination develops pathognomonic signs. There is, as you see, a smooth, oval tumor extending from the wrist into the hand, apparently just under the skin except where the annular ligament constricts it. It is tense, but fluctuates clearly, and when subjected to firm pressure at either end gives crepitus and the feeling of numerous small bodies passing from one end of the sac to another. This is caused by the so-called "rice bodies," and their presence in a tendosynovitis is diagnostic of the tubercular character of the disease.

This lesion has also been treated by the *x*-ray with the result of lessening the tension of the sac and freeing the motion of the fingers, but as the case cannot get well as long as the rice bodies remain in situ, I will proceed to remove them under local anesthesia.

The infiltration method is used by injection of the skin and subcutaneous tissues in the line of incision, with a .25 per cent cocain solution, and after waiting a minute incising the skin and tendon-sheath. This, as you see, is painless, and permits the escape of quite an amount of clear serum and a large number of opalescent, cartilaginous-appearing bodies of various sizes. I will now manipulate the sac so as to remove all of these rice bodies, about seventy-five to one hundred in all, and you will notice that they are smooth and white, of a flattened oval shape and fairly firm consistence. A section shows what appears like pure fibrin, but when implanted in a guinea-pig's peritoneum they regularly cause tuberculosis, thus demonstrating their tubercular character.

The tendons appear quite healthy in this case, which is an evidence that it is of recent origin, as otherwise they would be split up and infiltrated with tubercular tissue.

I will now swab out the whole cavity with pure carbolic acid, followed by alcohol, sew up the wound tightly, the tendon-sheath first and then the skin, and immobilize the arm and hand by a plaster dressing. This will cure the trouble in most cases if your asepsis is good, and result in a quite movable hand, but if suppuration should occur through your error, it will prove most disastrous and result in much stiffening and disability.

Our third case is unfortunately an only too common example of local tuberculosis, a so-called Pott's disease of the lower dorsal vertebræ. The patient is a little girl, aged four, and has had trouble with her back for over a year, and has been without proper care. She now has a decided kyphosis involving the lower dorsal and upper lumbar vertebræ, and her back is fixed and painful, and spasm is easily provoked.

The disease, as you know, is a tuberculosis of the bodies of the affected vertebræ, and as the tubercular products undergo caseation the bones soften and break down, and cause the existing deformity.

It is not advisable to directly attack this trouble as we do tubercular bone in other locations, so we must be content with fixation and attention to the general nutrition of the patient. Fixation is accomplished by various movable braces and by immovable jackets both of which have their advantages. In the present case we cannot depend on intelligent care of the patient at her home, so it seems better to rely on the non-removable support of a plaster jacket, first correcting, as far as possible, the deformity.

A plaster jacket can be applied in several positions, first, by suspending the child by her head and shoulders, her weight being utilized to straighten the spinal column; second, by the hammock with the child lying on her face and allowing extension of the spine by the curve of the weighted hammock; and, third, by the Goldthwaite frame or other similar device, in the dorsal position, a support being placed beneath the deformity and the weight of the shoulders and buttocks causing an extension of the spine and a correction of the deformity. Either of the latter two are easier to use on young children than suspension, and we will adopt the dorsal position on a Goldthwaite frame.

You see the child does not cry, but lies comfortably with her back supported by the adjustable post holding up the felt pads on each side of the projecting spines. We will now rapidly put on the plaster over a close fitting knit shirt, not forgetting a "dinner pad," as she is a good eater and we wish to encourage her in this. After the plaster dries it will be trimmed at both ends, and the edges carefully covered with sticking plaster to avoid chafing. The jacket will remain in situ for four to six weeks, and she will have to wear some support for one and a half to two years, and by this treatment we may hope to attain a firmly ankylosed and painless spine without greater deformity than you now see.

It is possible by the frame, to correct in whole or part the existing deformity in early cases, but in the present case this is hardly advisable.

A NOTE ON PRIMARY ETHER ANESTHESIA FOR SHORT OPERATIONS—PLEASANT, SAFE AND EFFICIENT*

By Edward J. Brown, M. D.

MINNEAPOLIS

The fact that short and painless operations can be done under primary ether anesthesia has long been known, but imperfectly appreciated by the majority of practitioners. Early in the present year an article by some foreign writer was abstracted in The Journal of the American Medical Association, in which, after an experience of fifty cases, the method was highly commended. The writer claimed that even prolonged operations could be satisfactorily done by inducing the primary effect of the ether at intervals as required.

In view of the fact that general surgical anesthesia involves serious dangers to life and health, and that such danger is especially great in operations on the throat, it has been my custom to employ local anesthesia wherever possible, but the most painstaking use of local means leaves much to be desired when tonsils are to be snared, or adenoids to be removed with the mildest means possible,—the Gradle adenotome. Glad of a method which might relieve my little patients of some of the horrors of these operations, I have employed the primary ether anesthesia since June 1st in 32 operations on 21 different patients, mostly young children. The ether was administered by the drop method with the ordinary chloroform-mask, from 8 to 12 grams being used in from 1½ to 2 minutes, and in most cases following one or two applications of 20 per cent cocain. In a few of the later cases among which was the removal of adenoids of four-year-old twin babies in my own family, the cocain was omitted without apparent disadvantage.

The children have uniformily taken the ether without objection, breathing deeply with the mouth open, and at the proper time allowing the instruments to be introduced without the necessitv of a mouth-gag. Vomiting that was attributable to the ether has not occurred in any case, nor has undue hemorrhage. With two exceptions the operations have been done at my office, the patients reclining on a lounge for an hour before going home. Some of these patients said they were hurt badly, some made but little complaint; and others admitted that they suffered no pain. A few days ago having occasion to do an internal Wilde's incision, in a case of acute mastoiditis in a four-year old boy, I applied the "cocain, carbolic acid, and menthol mixture," administered ether for one and a half minutes, and then freely incised the membrana tympani and the posterior-superior wall of the canal. The boy sat quietly, made no outcry, and later said he had suffered no pain from the operation.

---

*Read before the Hennepin County Medical Society, Minneapolis, Oct. 5, 1903.

THE HOSPITAL BULLETIN

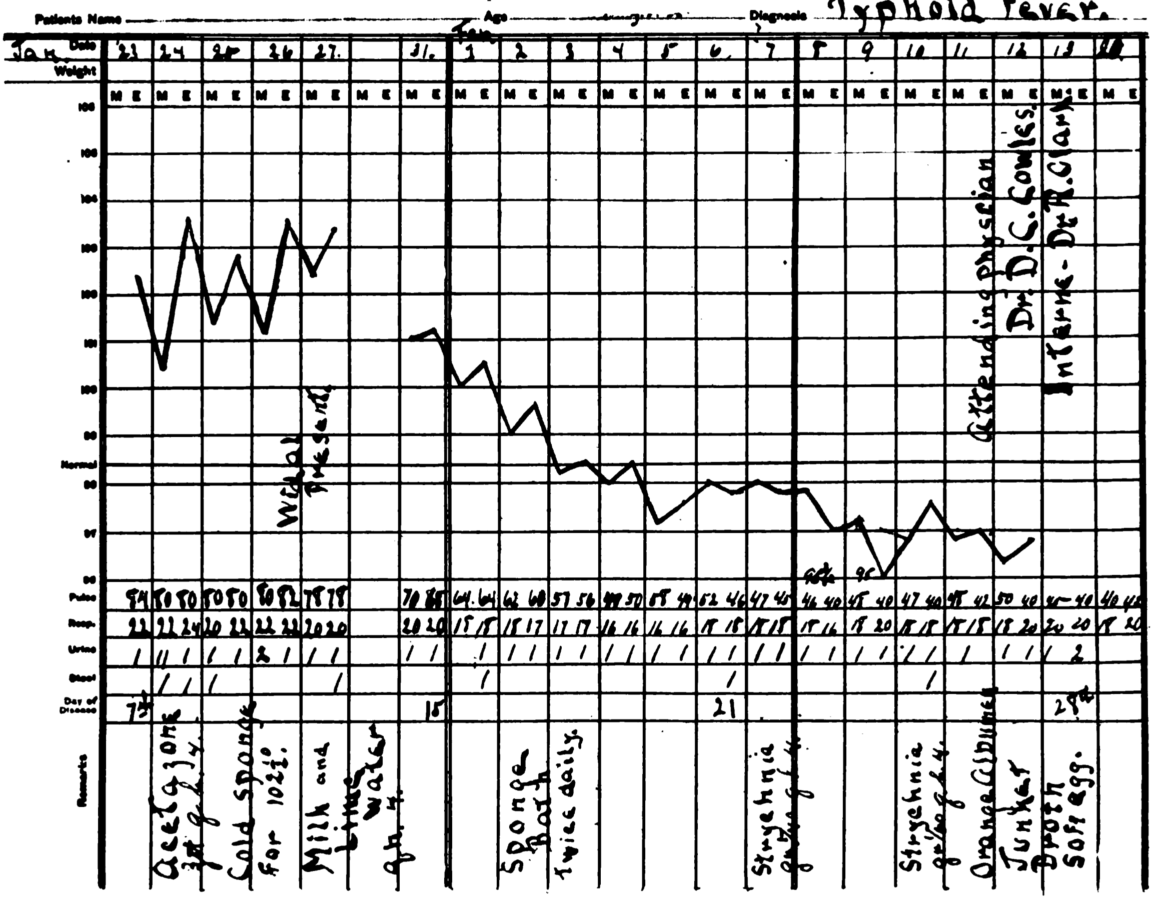
ST. BARNABAS HOSPITAL

MINNEAPOLIS

TWO CASES OF SLOW PULSE IN TYPHOID FEVER

In the Service of Dr. C. E. Gray

Case 1.—Darwin H——, aged 19, height 5 ft. 9 in., weight 135 lb., was taken sick Jan. 18, 1904, and sent by his physician, Dr. D. C. Cowles, to St. Barnabas Hospital. He gave a typical typhoid fever history throughout his illness with no complications. His slow pulse was the only peculiarity of his case. His pulse at no time was above 84, although his temperature reached 103.6°. His temperature during the third week was about normal, with a pulse between 64 and 46. From the fourth week on, with subnormal temperature, his pulse has been as low as 40 per minute, and that practically every morning for over two weeks. The mind was clear.



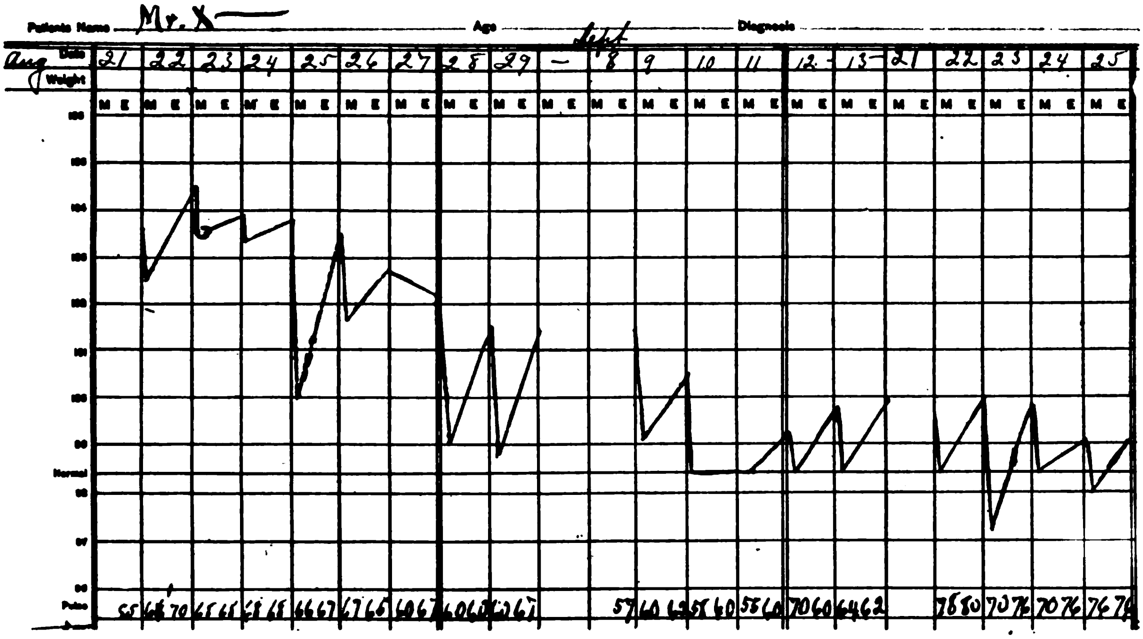
Case 2.—Chart given herewith of the second case is one obtained through Dr. Morley of St. Cloud and the attending nurse. Dr. Morley writes that the case was uneventful, and that there was no reason apparent for the strange behavior of the pulse. Nootnagel's Encyclopedia of Typhoid Fever, page 157, says the cases are infrequent and unexplained in which in the stage of subnormal temperature the pulse frequency also is subnormal. I have observed the pulse to decline to 50, even 40, in the evening, and to 36 and even 28 in the morning. Under such circumstances it is always conspicuously small and slow.

From a summary of 229 cases Dr. Osler, page 51 of Johns Hopkins Hospital Reports, Vol. IV, No. T, gives but two cases of slow pulse during convalesence, one at 46 and the other at 56 per minute.

In many cases the temperature may run low for a few days, but it usually becomes normal with the temperature.

The clinical features of these cases are reported, though they throw no more light on the cause than do the cases that have been now and then reported in the literature.

The pulse in these cases presents the characteristics of emaciation. Can this be the cause? or can there be a chemical reaction of the organism to the toxines in which some chemical bodies are produced, which, by physiological action, slow the pulse as some plants produce alkaloids which cause that action, as fox-glove produces digitalin?



CASE OF SKIN-GRAFTING FOR THE REPAIR OF A CRUSHED FOOT

In the Service of Dr. W. E. Rochford

Mr. T——, railway employe, entered St. Barnabas hospital Oct. 21, 1903.

Injury.—A severe crushing of the right foot, including the great toe and first metatarsal bone, followed by an extensive sloughing of all the superficial and deep tissues on the inner aspect of the foot, exposing the tarsal bones.

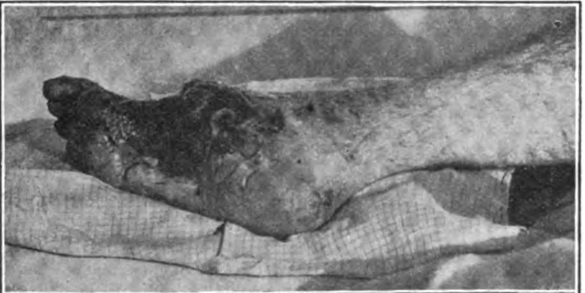
The main purpose of reporting this case is to call attention to the success obtained in grafting a large flap of skin taken from the calf of the opposite leg.

Plastic surgery is one of the most interesting branches of the surgical art, and has been practised since the earliest times, but modern surgery has, in this, as in every other branch of surgery, made improvements. Every surgeon familiar with emergency work appreciates the value of plastic surgery in the practise of conservatism as carried on to-day.

In the case reported, in order to save the foot, it was necessary to supply a skin flap to cover quite a large surface. It was also necessary to provide a flap that would be pliable and non-adherent, and one that would furnish a cushion to cover the exposed bony parts, and resist the pressure that will be brought to bear from the use of a mechanical arch, which will be worn in the shoe to support the foot.

In this case Thiersch grafting, ordinarily so useful, would not answer the needs. The method of securing the flap from the calf of the opposite leg was simple, and caused little inconvenience or suffering to the patient. A large tongue-shaped flap, including all the tissues down to the aponeurotic layer of the muscles, was dissected up, and left attached by a large pedicle from above. The cicatricial edges of the wound surface on the foot, to which the flap was approximated, were freshened. The dorsal surface of the foot was applied to the calf of the opposite leg, and about half of the oval surface of the flap was stitched to the freshened edges with silkworm gut. There was no tension put upon the flap, and little twisting of the pedicle. The flap was cut about one-third larger in size than the raw surface on the foot, in order to allow for shrinkage, which always takes place. The wound on the calf was covered with gutta percha tissue, and iodoform gauze was loosely folded around the wound with a liberal amount of plain gauze over this. Both limbs were then immobilized in a plaster-of-Paris dressing, the right limb (the injured foot) being in a flexed position, and the other leg straight.

Fig. 1—Two weeks before operation.



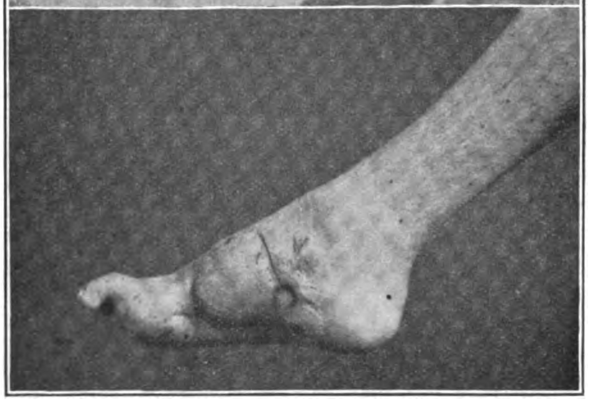


Fig. 2—Five weeks after operation.

The patient was kept under the anesthetic until the plaster was thoroughly dry. The dressing was not disturbed for ten days, except to make a small opening directly over the flap where the wound could be inspected. At this time the plaster cast was removed, and the pedicle severed without a local or general anesthetic causing little pain. There was primary union between the stitched part of the flap and the foot. The under half of the flap was not stitched to the lower border of the foot for four or five days afterwards, fearing it might constrict the circulation.

About three weeks after the operation the patch was completely united, and the raw surface covered. The patient was injured October 19, 1903, and the skin grafting was done January 4, 1904.

Before severing the pedicle, on pricking the flap, sensation was entirely referred to the calf of the leg. After the pedicle was severed, sensation was completely abolished, and at present there is no sensation in the flap. It will be interesting to note how long it will be till sensation is felt. The circulation in the flap was good from the first. There was no sloughing.

The cuts show the condition of the foot two weeks before the operation, and five weeks after it.

CASES IN PRIVATE PRACTICE

BY NEURITIS AND SECONDARY DESQUAMATION, RAISING THE QUESTION OF SECONDARY INFECTIOUSNESS

By R. J. Hill, M. D.

A girl, aged 10 years, was taken Oct. 17th, 1903, with scarlet fever. The disease ran an ordinary, rather mild course, and desquamation was late in showing but became quite general, and especially marked on hands and feet. This was slow, and quarantine lasted seven weeks. A trace of albumin was found in one examination of urine, the examination being made frequently. A week after quarantine was raised, or 8 weeks after the beginning of sickness, the patient, being perfectly well, complained of stiffness of the legs on going to bed, and the next day could not get up. I saw her that evening. The anterior portion of the right thigh was sensitive to touch, one or two points being very tender, though the limb could be handled without great pain. There was no redness or swelling to be seen. That night the pain was so intense as to preclude sleep, being paroxysmal in character, she crying out with pain on the slightest touch or motion. Temperature was 99° to 100°. The following day the other thigh was involved in the same way, and the pain was so severe as to require 1-16 gr. of morphin to secure any rest. This had to be repeated once in the night. The next day the left arm became painful, though not so bad as the thighs, and the left thigh was never as bad as the right, but the condition was very trying for the slightest movement—the slipping under of the bed-pan or even uncovering the limbs—brought on a paroxysm of pain that was almost unendurable. The condition gradually improved till in about two weeks it was possible to move her without causing much pain, and she was taken out of bed, and sat in a chair for a short time, and seemed to enjoy the change, but the pain returned in the night, and for several days was almost as bad as ever, although it did not last very long. About this time, a most profuse desquamation set in over the entire body, except the hands and feet, lasting about two weeks. The girl is now perfectly well, and has been in school since the first of the year.

My diagnosis was a neuritis involving principally the anterior crural nerves, due probably to the toxines of the disease, but its late onset after seven weeks, and when the temperature had long been normal and she seemed perfectly well, and, as I failed to state, with no exposure, not having been out of doors (her mother was scrupulously careful as to drafts, etc.), made it to me rather out of the ordinary. Then the question of secondary desquamation arose. Was this infectious?

The health officer informs me that a secondary desquamation occurs occasionally after quarantine has been raised, and that they do not regard it as infectious. In this case, another child was sent away to avoid the fever, and I did not feel safe in taking chances on his return during this period.

A CASE OF GALL-STONE

Service of C. H. Hunter, M. D.

Mr. E——, aged 64, stone contractor, no history of previous ailments. Four years ago while at work in a quarry he was seized with violent pain in the upper abdomen, extending to the back toward the right; vomiting followed and after a few hours it ceased. Has since been subject to such seizures every few months. Has never taken to bed. The doctors whom he consulted gave him little relief or satisfaction. Last June, after such an attack, he became jaundiced. The last two months or longer he has been confined to his bed, deeply jaundiced, moderate pain in right hypochondrium, chills, moderate fever, cough, no appetite, sweats and emaciation. I found him about a week before death in a wretched condition, very yellow, emaciated, semi-conscious, dribbling urine, cough, dyspnea, enlarged abdomen, fluctuation; hepatic and splinic dulness increased; p. 120, t. 102°; sweats, moderate pain in hepatic region. Gall-stone disease and gradual infection of the bile-passages seemed the most probable explanation of the illness.

Early drainage of the gall-bladder might have offered hope of relief. As surgery rarely comes to the relief of the dying, nothing was done.

It belongs to a class of cases characterized by obscure pain and disease of upper abdomen, exact appreciation of which is not too widely disseminated. As it came to post-mortem it is thought worth while to report the meager history.

POST-MORTEM FINDINGS

Dr. S. Marx White, Pathologist

Liver.—The substance of the liver is pale; the lobular markings, indistinct; the intrahepatic bile ducts are dilated and contain a thin, bile-stained purulent fluid.

In the gall-bladder four facetted calculi are found, averaging about 1.5 cm. in diameter. The walls are thick and very fibrous; the mucous membrane, thick, conjested, and in some places ulcerated. The gall-bladder contains about a dram of thick pus. About and between the calculi are seen small circumscribed grayish-white elevations, the largest 1 cm. in diameter, surfaces of which are pale and on cutting into them are seen to be abscesses filled with pus.

Intestines.—On opening the duodenum a nodular protuberance is felt in the region of the biliary papilla, and examination of this shows it to be a facetted gall-stone, about 1 cm. in diameter, dark, greenish-brown in color in the ampulla of Vater. In the common duct back of this is a second calculus, slightly larger, which can be moved up and down in the dilated duct. The ducts are greatly dilated, and contain a thin bile-stained, cloudy fluid, evidently purulent in character.

A number of lymphatic glands near the hilus of the liver are greatly enlarged, and contain numerous small abscesses. Some of the retroperitoneal lymphatic glands in the region of the hepatic flixure of the colon are likewise enlarged.

Autopsy Diagnosis.—1, cholelithiasis; 2, obstructions of common biliary duct by calculi; 3, dilatation of common and hepatic ducts; 4, septic cholecystitis and cholangitis with multiple abscesses in liver, 5 septic lymphadenitis in region of hilus of liver.

CLINICAL MICROSCOPY

DIAGNOSIS OF RENAL TUBERCULOSIS

The diagnosis of kidney tuberculosis is often a difficult matter from clinical symptoms alone, and no stone should be left unturned to remove the doubt. The most helpful aid we possess is the finding of the tubercle-bacilli in the sediment of urine passed by the patient.

Hunner, Johns Hopkins Bulletin, Vol. xv., No. 154, page 10, lays great stress upon the daily examination of the sediment for bacilli rather than the examination of 30 or 40 smears from the sediment of one day's urine. He says: "In the course of a week there is likely to be a shower of bacilli from some freshly broken down focus of disease in the kidney."

A good method to follow in demonstrating tubercle-bacilli in urine is as follows: Centrifugalize the urine or allow it to stand in a conical glass until a sediment is formed. Pick up the sediment with a glass pipette, and allow it to flow in a thick layer upon the surface of a slide; and then dry in the air for two hours, or by gentle heat. Pass through the flame of a Bunsen burner six or eight times; then run on to the slide some Ziehl Neelsen carbol-fuchsin, and stain for five minutes. Pour off the carbol-fuchsin, and decolorize in 70 per cent alcohol for ten minutes. Now stain with Gabbett's methylene-blue for one minute. Wash in water, dry in the air, and examine with the 1-12 oil immersion lense direct without a cover-glass.

In this way one can easily examine a large quantity of sediment in a short time.

The reason for decolorizing with 70 per cent alcohol is to exclude the smegma bacillus. This organism stains with carbol-fuchsin as does the tubercle-bacillus, but decolorizes with alcohol, while the tubercle-bacillus does not. (There are exceptions to this rule.)

When present in urine the tubercle-bacilli are easily found, and often occur in masses, which quickly attract the eye. When present singly they are often obscured by the mass of pus cells present, and are not so easily identified. It is therefore important where many pus cells are present not to make the smear too thick. The importance of searching for the bacilli as a diagnostic aid is well shown by Hunner's cases, 15 out of 22 cases of renal tuberculosis showing tubercle-bacilli in the urinary sediment.

ALBUMOSURIA

Occasionally in the examination of urine one comes across a substance which gives a heavy white ring-like serum albumen with the nitric acid contact-test, but which acts as follows upon the addition of heat: Heat gently, and a heavy white precipitate forms, which becomes even denser as you heat it, until when the boiling point is reached the precipitate suddenly disappears leaving the urine clear with a few little curdy masses floating on its surface and clinging to the sides of the test-tube. Set the urine aside until it cools, and the precipitate reforms. Acidify with acetic acid a few c.c. of this urine, and add a few drops of a saturated solution of sodium chloride, and a heavy white precipitate forms, which disappears on boiling and reappears on cooling. Take 5 c.c. of the urine, and add 15 or 20 drops of concentrated nitric acid, and a heavy white precipitate will form, which disappears on boiling and reappears on cooling.

This substance is albumose. It is an intermediary product of proteid digestion, and is classed between proteids and peptones. Albumose has been found in the urine in a variety of diseases. Bence Jones first discovered it in a case of osteomalacia, in which disease it has also been found by other observers. Hoppe Seyler identified it in several cases of atrophy of the kidneys. Senator discovered small quantities in the urine of patients with diphtheria, croupous pneumonia, tertiary syphilis, carcinoma, muscular atrophy, etc., and in sarcomata of bones of the trunk. It has been found also in myxedema. In some cases of long-standing empyemas, and also where the body has harbored for a long period a focus of pus albumose has been found in the urine. When present in large quantities it suggests a malignant bone lesion, and careful search should be made to exclude this condition in cases of albumosuria.

EOSINOPHILE LEUCOCYTES

Large white-blood corpuscles with polymorphous nuclei, and large granules taking a copper-colored stain with Ehrlich Brondi tri-acid or an orange color with eosin are called eosinophile leucocytes.

They are present in the normal blood in about 0.5 to 4 per cent of the total number of leucocytes. In myelogenous leukemia, trichinosis, bronchial asthma, malignant diseases of bones, epilepsy, migraine, etc., they are markedly increased in the circulating blood. Opie (Amer. Jour. Med. Sciences, Feb., 1904) has published some original observations concerning the behavior of these cells under varied normal and abnormal conditions. Among his conclusions are the following:

1. The number of eosinophiles in a c. mm. of blood varies from day to day, and at intervals of 3 or 4 days undergoes an increase.
2. Starvation causes a decrease of eosinophiles in the circulating blood.
3. The taking of food after starvation causes a rise in the number of eosinophiles in the blood.
4. As an animal loses in weight the number of eosinophiles in the blood increases.

Geo. Douglas Head, M. D.

NORTHWESTERN LANCET

A SEMIMONTHLY MEDICAL JOURNAL

The Official Organ of the Hennepin County Medical Society

W. A. JONES, M. D. .... EDITOR

Editorial Office, 515 Pillsbury Building

W. L. KLEIN, PUBLISHER

SUBSCRIPTION, $2.00 A YEAR.

839-840 Lumber Exchange .... Minneapolis

MARCH 15, 1904

A DAILY MEDICAL JOURNAL

A daily medical journal has long been the dream of some—dreamers. Why not a daily? How can the profession wait a whole week for the new things in medicine and surgery? Has not the long-continued absence of a daily journal for the profession been evidence of a spirit of conservatism that may well be taken by the laity as proof of the profession's lack of progressiveness—of its old fogyism? How can a conscientious practitioner stand baffled at the bedside of a dying patient, and hark back to the voice of yesterday, when of right he should be listening to the voice of to-day, if not of to-morrow, for guidance? These have been hard questions for some people to answer; and now just as radioactivity is filling the world with perpetual light, the "Daily Medical"—euphonious sound!—is at hand.

We of the minor and slower journals—the weekly, the semimonthly, the monthly, and the staid old quarterly—open "Vol. 1, No. 1" with forebodings of doom; and how hesitatingly we read the first lines—catch the first dawn, as it were, of new things,—only the editor whose fame, and, it may be, whose daily bread, depend upon the degree of success that awaits this forerunner of twentieth century medical journalism, can tell. But we had to face our doom, and as we read we could not but feel that the fates seemed to have doomed Northwestern medical journalism to special ignominy. Here is the first item in the first daily medical journal ever published, and it comes all the way from New York:

> St. Paul, Minn., Feb. 8. (Special).—Henry Schoenberg, while waiting in the office of a Minneapolis physician two weeks ago, picked his teeth with a little ivory tip, which was really a fresh vaccine point. It "took," and now his doctors are feeding him milk through glass tube.

If this is *daily* medical journalism in the twentieth century, we shall patiently wait a couple of months or so to see whether it "took" or not.

WORKHOUSE LIQUOR CURE

The Board of Corrections and Charities have appropriated $25.00 for the establishment of a jag cure at the workhouse! Just what this appropriation is to cover is left to the superintendent of the workhouse to disclose. This sum of money will buy a few good strong hypodermic syringes and a few simple drugs. Perhaps the superintendent has invented a new liquor cure, and wishes to give the frequently recurring inmates a chance to put themselves in better form to fight off temptation when their sentences expire.

Is this all there is to the liquor habit? Can a vice be corrected by a hypodermic, and are the surroundings and associations conducive to reformation?

Is the superintendent a medical man? Can he determine what is suitable for individual cases, or is each one to get the same and the regular "shot" that is used in various liquor-cure institutions?

This is a peculiar way to handle the vagrant and dissipated habitué. It would be far better to place these drunkards who are sufferers from chronic alcoholism under the care and observation of a member of the city hospital staff, who could study their needs and advise a line of treatment.

The chronic alcoholic is usually the victim of malnutrition, due to his neglect to supply his system with food, rather than to the effects of alcohol. These people need a special diet composed of foods that are readily assimilated, and which contain the greatest quantity of nutriment. The injection of drugs is a side issue only, and is not curative in any sense, unless foods, environment, and occupation are adapted to each case.

The workhouse method is a waste of time and a travesty on good judgment, and should be discountenanced unless conducted by a medical man.

INJURY TO THE SPINE

The outcome of a spinal injury due to direct violence is often one of the most difficult problems for the surgeon and physician to solve. A bullet wound, a fall, or a blow near the spine may be followed by an immediate paralysis of the structures below the seat of injury as complete as in a case where the spinal cord is wounded or lacerated. Many of the cases in which paraplegia with bladder and rectal symptoms predominate are followed by a destruction of the cord more or less complete. Fortunately, in a few cases the immediate symptoms clear away, and the patient makes a comparatively rapid recovery. Blows about the head followed by alarming symptoms improve and recover, and the presumption is that the brain has been jarred, and its functions temporarily suspended. The brain suffers no appreciable or permanent injury, no tissues have been lacerated, and the change, if any, is biochemichal or nutritional.

Such escapes from serious lesions may occur from injuries to the back, the functions of the cord being disturbed for a time. The circulatory system, made up of an intricate network of vessels, may be affected to a degree more or less speculative, and in time resume its normal functions. The remnant of the injury depends upon the care of the individual. If he be allowed too much freedom of motion and an insufficient time in which to rest, a moderate injury may be followed by permanent disability. On the other hand, a grave lesion under restricted environment may fully recover, and no after-effects appear.

In the recoverable cases it is the individual rather than the injury that aids in the prognosis.

Early care, thorough investigation of the course of the wound, if from a bullet or foreign object, and time are the elements in recovery.

If the injury be from a bullet wound, a thorough and searching exploration should be made as soon as possible. This method is more imperative in injuries of the spine or cord than in similar wounds of the brain, although it would be well to surgically explore head injuries to a greater extent than is usual.

A bullet may penetrate the outer table of the skull, flatten, and splinter the inner table without serious laceration of brain substance.

It has been shown by autopsy that the force of the blow may penetrate the bones of the skull, and by the compact of the bullet may produce a lesion in a remote part of the brain.

The extent of an injury to the spine may be misleading, if the course of the foreign body is not definitely determined and the remote effects be more serious than first anticipated. Hemorrhages in or about the cord, and lacerations of vessels or nerve-tissues, whether gross or minute, cannot be accurately disclosed. Outlining the sensory and motor disabilities by a painstaking examination, as well as by an analysis of the individual, one may approach with reasonable certainty the diagnosis and prognosis of the injury.

THE PHYSICIAN AS A BUSINESS MAN

The death of Dr. Cyrus Edson, of New York, who left an estate of a little more than $4,000 out of a reputed income of between $30,000 and $40,000 a year, points a sharp finger at the physician who neglects his business opportunities, and leaves his family unprovided for. Dr. Edson was said to have been very lavish in the expenditure of his income, and possessed no settled home. The house in which he lived was not his own, but was rented from year to year.

When a physician enjoys a good practice, and has an income that is an equivalent in his community to the income of a New York practitioner, there is no excuse for not saving money one way or another. The average country physician, or the physician in small cities, if a business man, can in some way put aside by investments in local securities, lands, or endowment life insurance, a sufficiency to provide an income for his family or himself, which is inevitably called for in later life. Many men who have practiced medicine in small towns and who have grown old as the towns grow to maturity, have from the beginning been lax in their business methods, keeping no account of their work or keeping one in a way that no court would countenance, or relying upon the patient or family to pay much or little as they choose. Under such circumstances it is not surprising that many country practitioners are poor, and their families suffer for necessities late in life. The man of business, however, the younger man who has a business system in keeping his accounts, is the one who, in a few years, saves a small fortune. A young man who settled in a small town in western Minnesota did a business of $6,000 a year. Out of that he lived well, owned his home, made biennial trips to New York for instruction, and left the town in five years with $15,000 cash to his credit. His opportunities were no greater than many others, yet how many can report such a saving?

The man who looks ahead, is saving by inheritance, in the course of a few years can own a farm or two that will give him a permanent income; at least that is the experience of many in Minnesota, and other parts of the Northwest. The failure of others to lay by a reasonable sum is not alone due to poor business methods in collections and fees, but to unbusinesslike schemes and extravagance. The average doctor is a soft mark for book-agents who sell him beautifully bound books for his ever-increasing library, which he seldom consults; land and oil schemes of which he knows nothing; gold mines which glitter in the eyes of the promoter, yet always go wrong at the wrong time; and other schemes too numerous to recite. The busy doctor is always ready for such wild-cat ideas, realizing his lack of business insight, yet hoping this or that investment will pay anywhere from forty to one hundred per cent.

The man in the city is no better. He buys or contracts to buy everything that comes into his office, from gold mines to having his picture in some distantly printed paper. He is ever ready to be duped, trusting the smooth-tongued, oily individual who presents his prospectus and invites him to freely partake of the pot of gold.

It is time the doctor who is so easy should be either placed under guardianship, or should consult an attorney before any investment is made. In this way wild-cat schemes would be promptly turned down, and poor investments discouraged. Money safely invested in first-class mortgages is better than broker's stocks. Bank stock in a small conservative bank, situated in the midst of a prosperous farming country, should not be neglected. A home is a necessity, and no man is a full-fledged citizen until he acquires a permanent abiding place. Endowment insurance, although expensive, is an investment saving which protects during early life, and provides for declining years. These are legitimate investments, unusually safe and approved by all good business men. A physician owes much to his family. His peculiar life, his enforced absence, and his irregularity are exasperating in the extreme; therefore he should offer reasonable compensation by definitely providing for accidents, illness, and death, put particularly for the comforts of those who depend upon him for their future existence.

BOOK NOTICES

Electrotherapy. Thoroughly illustrated. 2 volumes. By George W. Jacoby, M. D., New York, with special articles by Edward Jackson, A. M., M. D., Denver, Col. William Scheppegrell, M. D., New Orleans, J. Chalmers Da Costa, M. D., Philadelphia, Franklin H. Martin, M. D., Chicago; and A. H. Ohmann-Dumesni, M. D., St. Louis. Philadelphia; P. Blakiston, Son & Co.

The aim of this system is a sound one,—to collate and emphasize all the methods of cure other than drugs, and so voice and fill a growing want of the profession. The publishers give the series a very attractive appearance in blue buckram, gilt titles, heavy book paper, and clean-cut, widely spaced, readable type.

There have been so many changes in substance and nomenclature in electrical knowledge that a new book has become desirable.

Dr. Jacoby opens with a chapter on the current in the body, with cuts and diagrams. There follow chapters on the current in motor, sensory, and central nerve systems.

Part IV is devoted to electro-diagnosis and prognosis, with numerous cuts for nerve prints.

The chapter on sinusoidal and high frequency currents, such as are got by the ordinary resonater, we have read with interest.

Part V, 80 pp., is a condensed, clean-cut presentation of apparatus qualifications and general principles of electro-therapeusis in the different diseases.

The book closes with a hundred pages of addenda by well-known specialists in surgery and the specialties. A full index closes the volume.

NEWS ITEMS

Dr. N. M. Wade, of Lead, S. D., will move to St. Paul.

Dr. E. Klaveness, of Brookings, S. D., is home from Europe.

The Northern Minnesota Hospital of Farley will be moved to Black Duck.

The removal of Dr. Smith from Parker, S. D., leaves that place without a physician.

The Morrison County Medical Society passed a uniform fee bill at its last meeting.

Drs. W. J. Mayturn and A. J. Gifford, of Alexandria, S. D., have dissolved partnership.

Dr. Skelcey, who was contemplating locating in Minnesota, has begun practice in Fargo, N. D.

Dr. J. S. Chapin, of Euclid, is still in poor health, and has gone to Chicago for treatment.

Dr. Thor. Moeller, of Rolla, N. D., has formed a partnership with his brother at Devil's Lake, N. D.

Dr. F. V. Lyman, of Caledonia, has located at Beltrami. Dr. Lyman is a graduate of the State University, class of 1903.

Dr. Fred E. Schacht, the famous foot-ball player, who graduated from the State University last year, has located at Fergus Falls.

The sanitarium of Dr. Parker at Warroad was destroyed by fire last month. A new building will be put up at once.

Dr. Benjamin H. Chedeck, a Hamline graduate, who has been practicing in Sioux City, Iowa, has located at Verdigre, Neb.

Dr. C. Z. Heimark has decided to locate at Elbow Lake, instead of at Fergus Falls, as formerly reported in these columns.

Dr. E. A. Borchardt, of St. Paul, died last month in Detroit, Mich. He was a graduate of the State University, class of '93.

Dr. J. G. Cross, of Minneapolis, and Dr. Frederick Leavitt, of St. Paul, were elected members of the Academy of Medicine at its last meeting.

Dr. J. B. McNerthy, who graduated from the State University in '99, and is now located in Tacoma, has gone to New York to do post-graduate work.

Dr. J. F. Locke, of Long Prairie, who has practiced in Todd county a good many years, has gone to California to live on account of the poor health of his wife.

Dr. A. T. Mann and Miss Winona B. Orff, both of Minneapolis, were married on the 7th inst., and at once started for Europe, where Dr. Mann will study surgery for four months.

The Catholics of Dillon, Mont., are planning to establish a hospital, and to erect a building to cost $15,000 or $20,000. Fathers Prudenz, of Dillon, is at the head of the movement.

Dr. J. B. McGaughey, of Winona, has been appointed by Gov. Van Sant to fill the position of president of the State Board of Health, made vacant by the death of Dr. Franklin Staples.

Dr. C. B. Pillsbury, a prominent homeopathic physician of Duluth, and formerly a resident of Minneapolis, died on the first of the month from blood poisoning, caused by an abscess of the throat.

Dr. D. F. Dumas, who formerly practiced in Minneapolis, has returned to the city, and located again before practice. He was a graduate of the literary department of the state university, but graduated in medicine from The College of P. and S. of Chicago.

Dr. Wm. A. Kriesel, of Milbank, S. D., has been appointed by the "Committee on Medical Legislation" of the A. M. A. as a member of the National Auxiliary Congressional and Legislative Committee. Dr. Kriesel was on the legislative committee from the South Dakota Medical Association last year, and was active in the passage of bill No. 150 regulating the practice of medicine in South Dakota.

FOR SALE

Fifty volumes of Wood's, Appleton's, and Pepper's standard medical works, and also one Harvard chair and physician's instruments are offered for sale. They were the property of a physician who recently died. For prices, etc., address

Mrs. Dr. J. H. Kinney,
Royalton, Minn.

SANATORIUM FOR SALE

Owing to the death of Dr. Sam C. Johnson, the Sanatorium at Hudson, Wis., is for sale by the administrator of Dr. Johnson's estate. The property is beautifully located on the bank of Lake Mallilieu, and is within the city limits. The building is steam-heated, electric-lighted, and supplied with modern appliances and apparatus. It has been very successful for a number of years, and will return a large interest on the money invested. Its location is so near the Twin Cities, and so far from a like institution, it need never lack for patients. It can be bought for a very low price, and to a satisfactory purchaser, reasonable terms will be given. For further information, address or call upon

Wm. H. Phipps, Special Administrator.
Hudson, Wis.

[SUPPLEMENT]

ST. BARNABAS HOSPITAL

MINNEAPOLIS

REPORT OF THE CHIEF OF STAFF

Mr. John I. Black, President of the Board of Trustees,

Dear Sir:—

A number of changes and additions have been made the past two years in St. Barnabas Hospital to which it will be worth while to invite the attention of the public and friends of the hospital.

First. The Maternity Department. Ample rooms for a number of patients, well equipped for aseptic midwifery, sequestrated from the rest of the hospital, with nurses, should appeal to a good many well-to-do people living in flats or otherwise crowded. We would earnestly recommend that measures be taken to bring this department to the notice of the public and profession, that it may do its share in the general economy of hospital work.

Second. The keeping of the records of cases is now perfected so that the systematic obtaining and recording of information and the methodical training of internes and nurses therein is better secured. The charts arranged to cover a history, bed-side notes, and clinical laboratory findings, and kindred details, are filed in a cover, preserved in numbered boxes, and referred to by a card index. A member of the staff has been selected as Registrar of Charts to see that these details are properly carried out. It is now dependent upon the visiting doctors to see that these records are as rich, full, and accurate as possible. A fund of information, valuable to the profession, should thus be accumulated with the lapse of years.

Third. The additions made in the equipment of the hospital are considerable and noteworthy. The important ones are the Clinical Laboratory in charge of Dr. Wesbrook, and the X-Ray Electrical Laboratory in charge of Dr. W. P. Spring. They can be noted in the accompanying illustrations and legends appended to each.

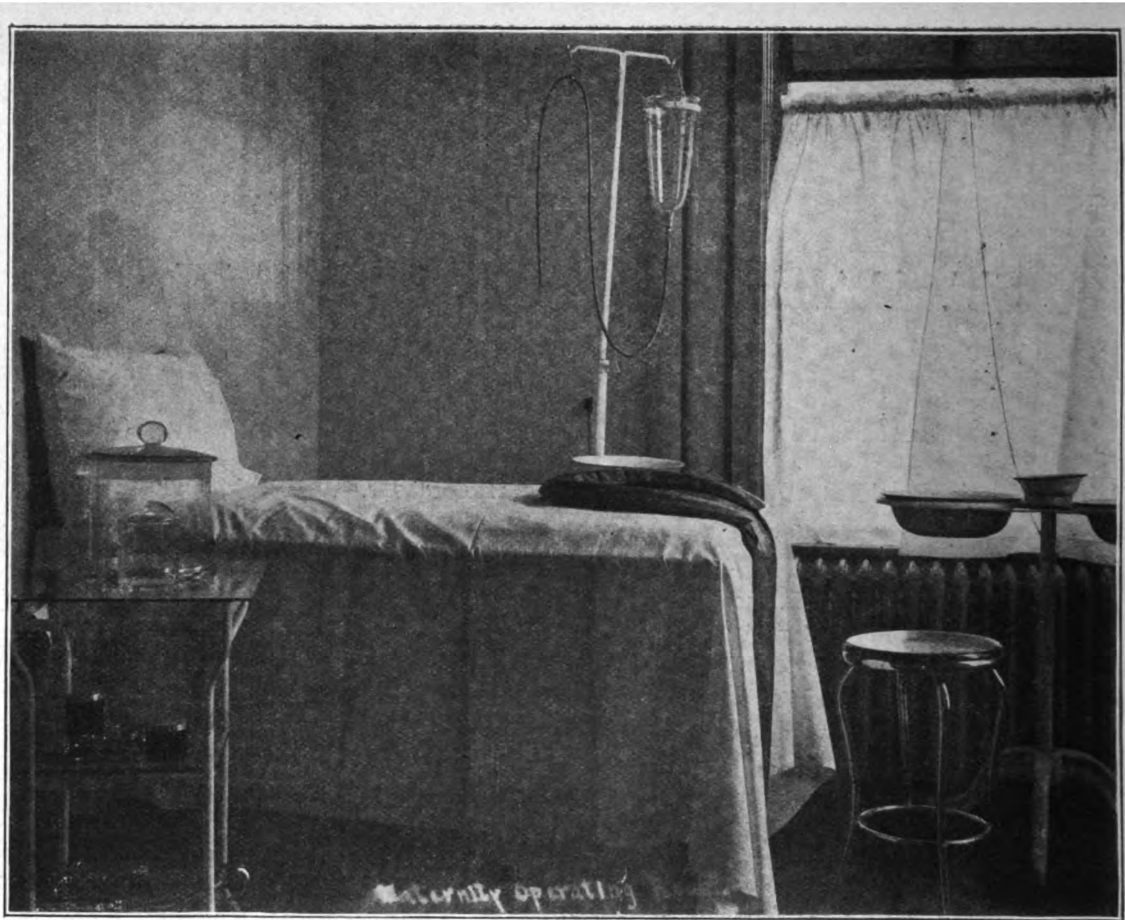
The staff wish to take this opportunity of again thanking its friends for their generous response to its appeal for funds towards this equipment.

With the addition of an interne for the Clinical Laboratory it seemed advisable to rearrange the interne service altogether. The staff enters upon this with some trepidation, because it is familiar with the travail of the old staff to institute the six-months service. As the service is arranged for the future the Clinical Laboratory interne will serve a full year, when he will be eligible for the clinical services. These services are divided into four months each: drugs and ambulance the first four months; medicine and anesthesia four months; and surgery and operating-room the last four months. We do not know that the popularity of the short service among Western students is justified, but one compensation will be that a greater number can get it. These services will be open to any student by competitive examination held sometime in the spring. We hope that a close inspection of what is offered will attract a goodly number of the bright men of the northwestern schools.

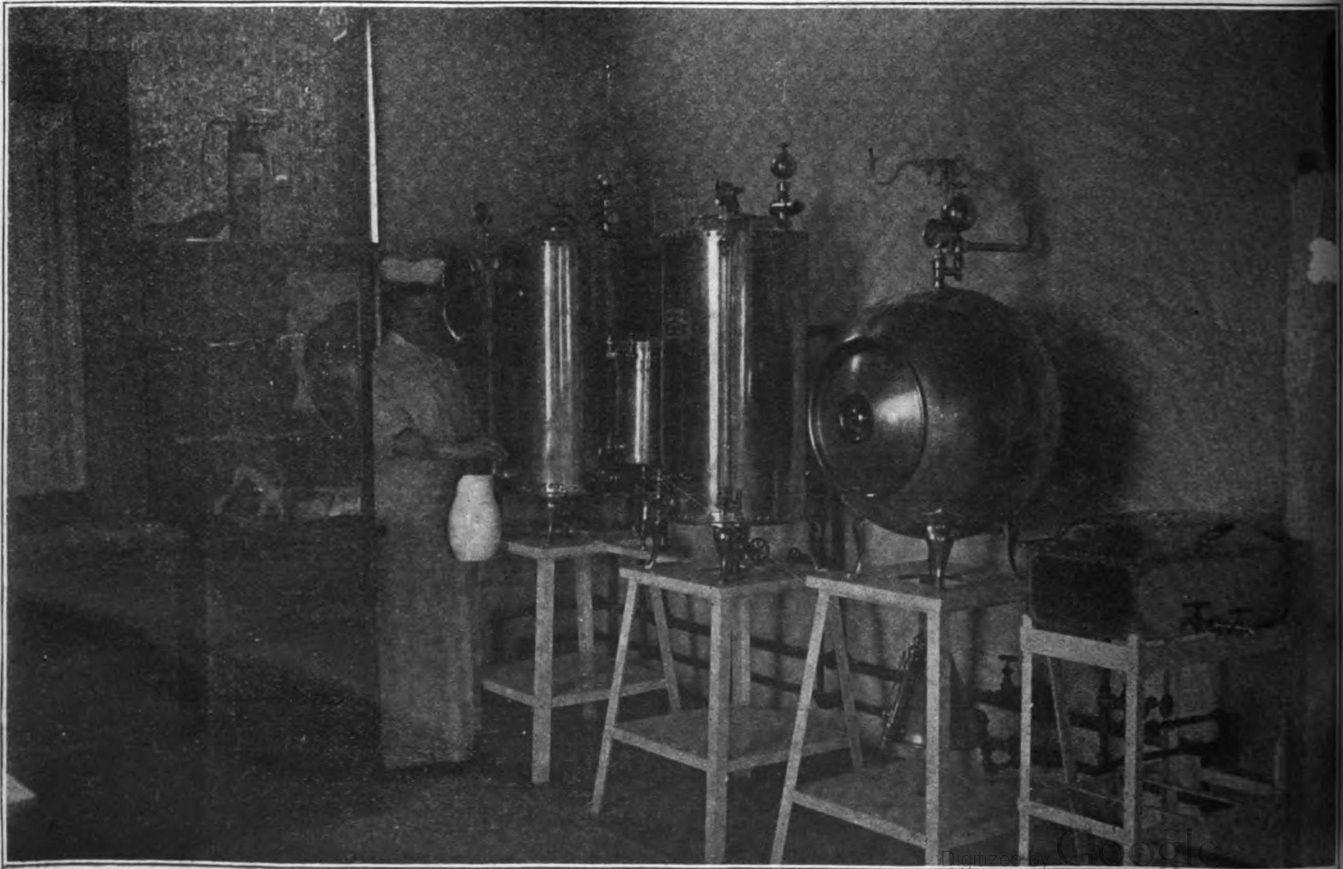
In conclusion a good many things still remain to be done. The disposition of the staff, and the harmonious feeling prevailing in the working forces of the hospital augur well for the continued organic growth of St. Barnabas.

Chas. H. Hunter, M. D.
Chief of Staff.

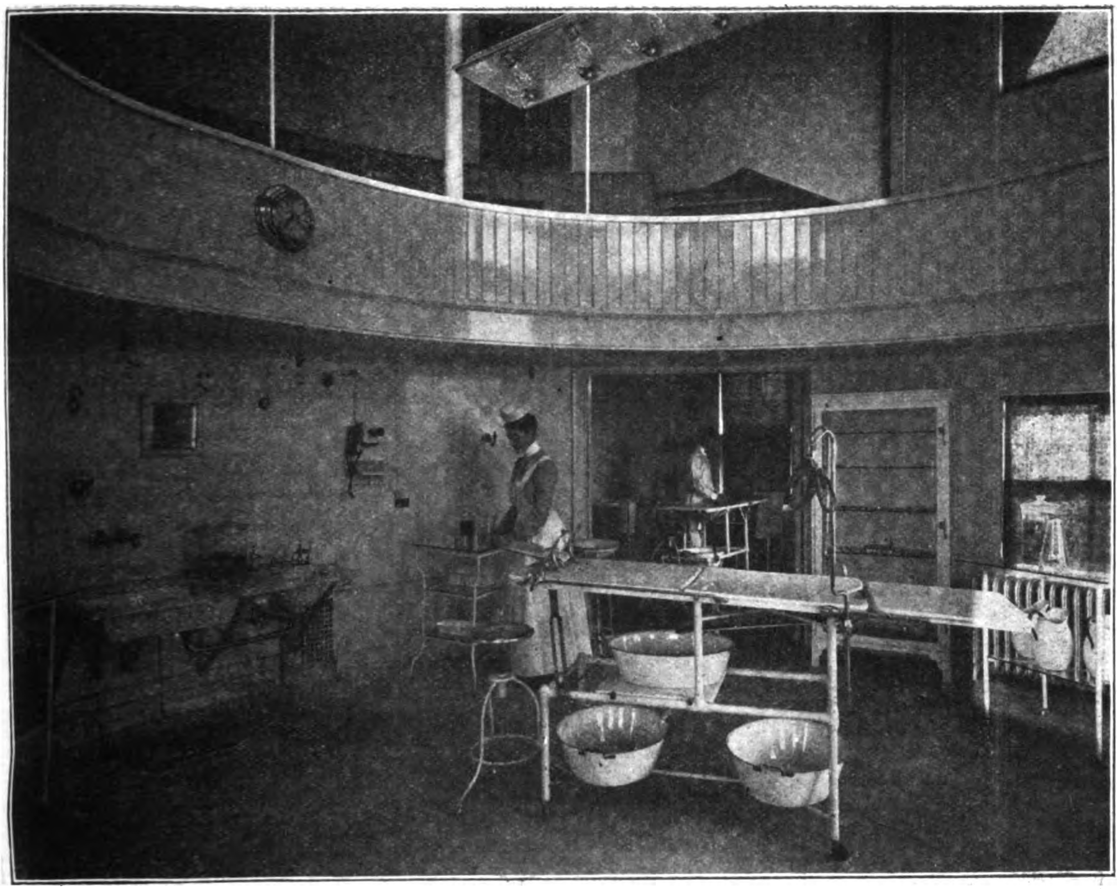
The illustrations on the succeeding pages give a few interesting glimpses of the interior of the hospital building. Other illustrations will follow in their proper places in this report.



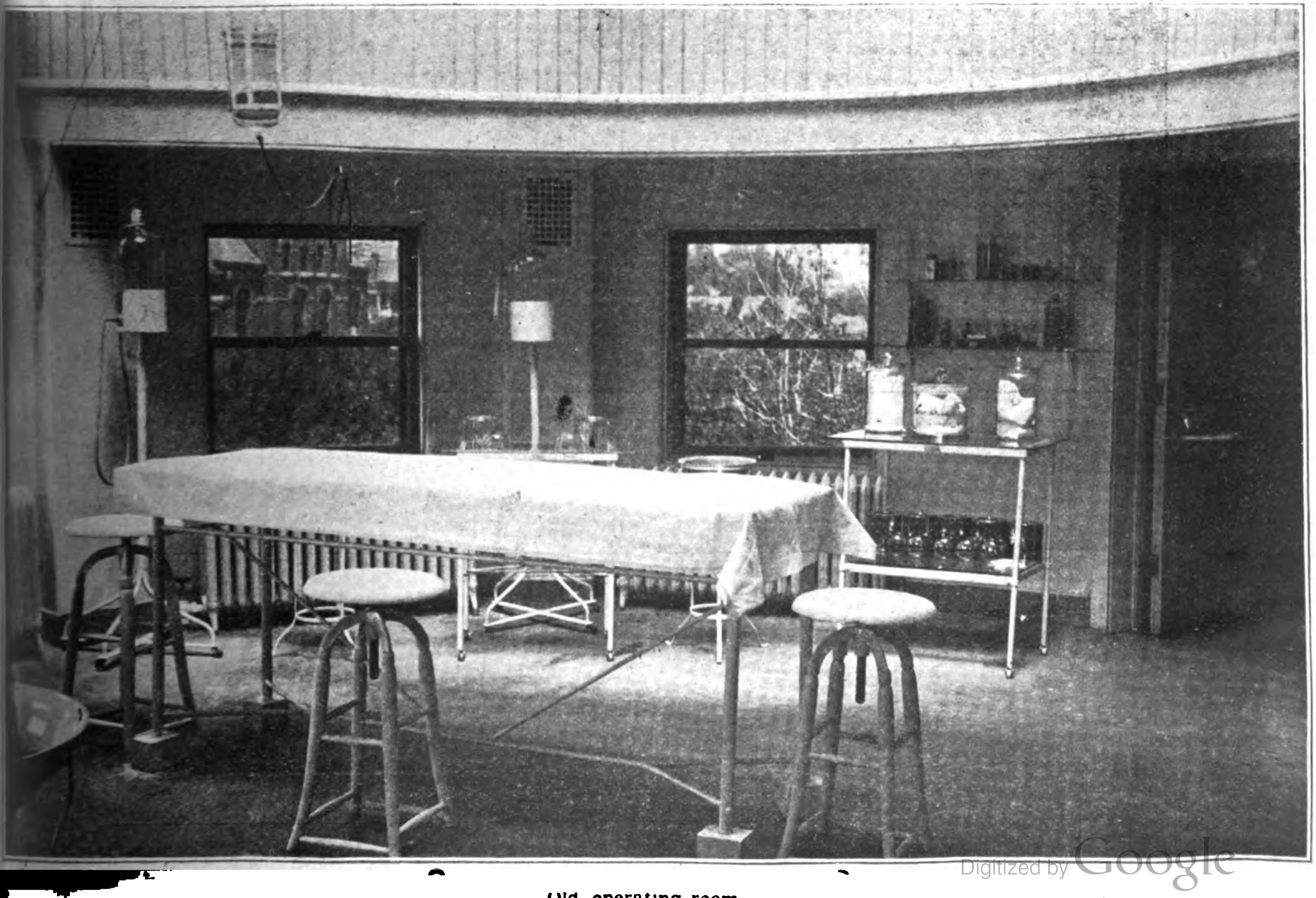
Delivery Room in Maternity Department. Photo by Interne Grey.



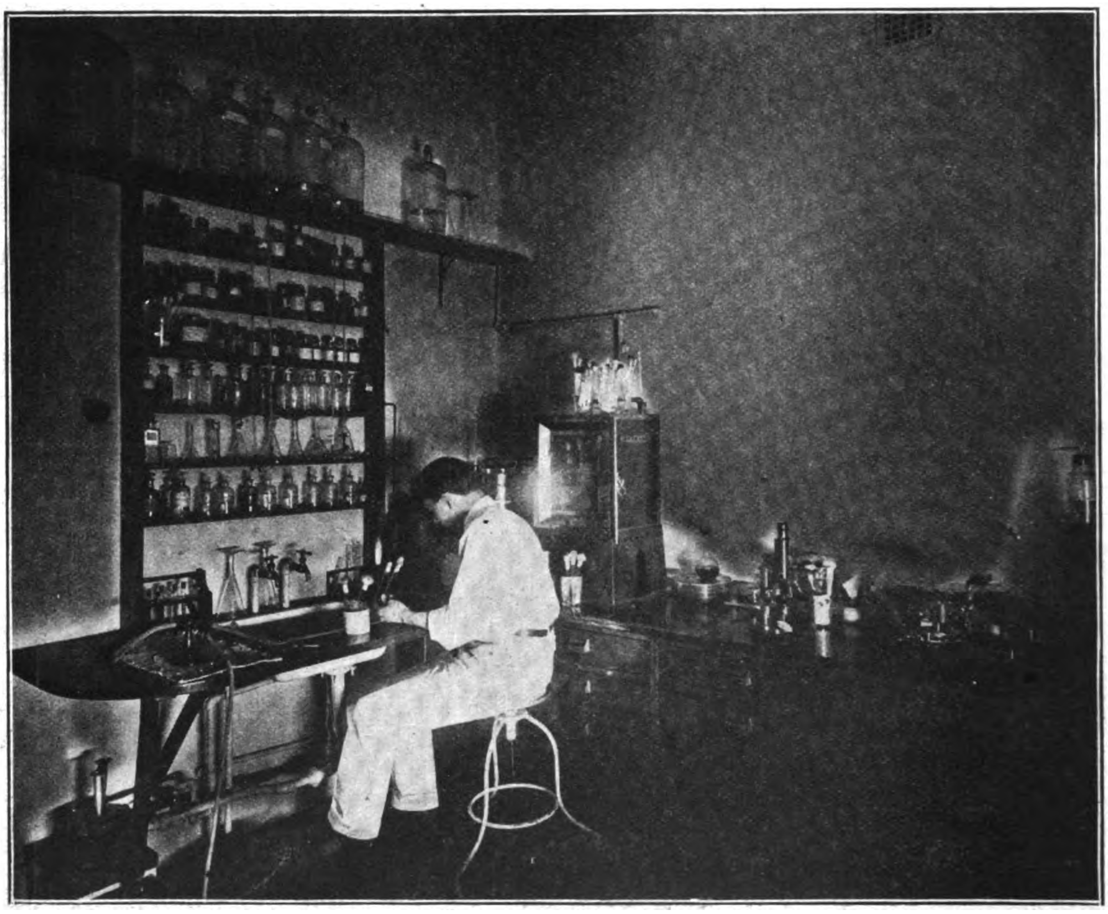
Sterilizers used in the sterilizing room of the operating suite.



View of the present operating-rooms, with furnishings.



Old operating-room.



This cut shows one corner of the recently established Clinical Laboratory, which is also fully equipped for pathological work. The laboratory is in charge of the resident pathologist, R. L. Tebbitt, under the supervision of Drs. Wesbrook and White of the State University.

NORTHWESTERN LANCET

A Semimonthly Medical Journal

VOL. XXIV APRIL 1, 1904 No. 7

FLAT-FOOT OR SPLAY-FOOT, PES VALGUS

By K. Hoegh, M. D.,

MINNEAPOLIS

In spite of the fact that this deformity is second in frequency only to lateral curvature of the spine it does not receive the attention from the profession which it deserves. The reason is partly that it is overlooked or misunderstood, and partly that the treatment is tedious, and demands a more hearty cooperation of the patient than most other diseases and deformities; for, while it is emphatically a curable disease, at least in the common forms, it demands for months daily gymnastics and manipulations, to which patients will submit only if they can be made to see that the treatment is both necessary and effective.

The deformity is, when analyzed in its anatomical features, somewhat complicated. In the first place the astragalocrural joint is flexed towards the sole,—plantar flexion. In this joint we also find some abduction; and the compound joint, called Chopart's, which consists of the articulation of the astragalus and calcaneum behind and the scaphoid and cuboid in front, is also out of its normal position, and is held in dorsal flexion. At the same time we have, as the third deviation from the physiological shape, an eversion of the foot in its totality so that its lateral margin is raised, and the medial margin depressed. This displacement takes place mainly in Chopart's joint.

We recognize several varieties according to the cause. In the first place we have the congenital variety, which is the most difficult to cure, as it may depend upon congenital and grave deformity of the skeleton, or even absence of some of its component parts. In the treatment of these rather rare cases it is of the utmost importance that it be begun from the very earliest time that it is observed, as otherwise the skeleton will be molded into greater deformity when the child begins to walk.

Of far more importance, because more common, is the traumatic variety, which usually is the result of a badly healed fracture of both malleoli with the foot in abduction. As the foot in its totality is dislocated inwards, the functional result is bad, so that such patients can not usually walk without support. The practical point in this form is the prophylaxis, which demands proper setting of such fractures and proper retention of the foot, with suitable after-treatment.

A third form is the paralytic flat-foot, which occurs when the posterior tibial nerve is affected; the plantar flexors and the supinators are involved. It may also occur when all the muscles of the leg are paralyzed.

The rachitic form is the result of the softness of the bones of the tarsus; and under the influence of the weight of the body, the foot is pressed into abduction and eversion. If, as commonly happens in rachitis, the knee is bent inwards, static conditions are yet more unfavorable, and the highest degrees of deformity are thus produced.

The most common, and perhaps, therefore most important, form is that which we call the static flat-foot. By statics we understand that branch of mechanics which treats of the relation of the forces that act upon a body at rest so that it may maintain its equilibrium. To understand the mechanism of flat-foot, it is necessary to consider the foot anatomically and mechanically as the base that has to sustain the body weight.

Lorenz holds that the foot consists of two arches, an external one composed of the calcaneum, cuboid, and the heel of the two last metatarsals, and an internal one formed by the heads of the three inner metatarsals, cuneiform, scaphoid, and astragalus, which again rests on the calcaneum. It is thus finally the external arch that must sustain the weight of the body. In walking the astragalus has a tendency to slide forwards on the calcaneum; in standing there is a tendency to eversion, as the calcaneum is outside the center of gravity.

This idea of Lorenz is, however, not entirely in harmony with recent investigations of V. Meyer, who has found that the anterior pillar of the vault is formed mainly by the head of the third, and partly by that of the second, metatarsal. We are thus compelled to look upon the foot as consisting of a single arch; in front it rests upon the head of the third metatarsal, and behind upon the two prominences of the inferior surface of the calcaneum, the medial and the lateral tuberosities. The other metatarsals can be considered as mere buttresses that help the foot to adapt itself to the inequalities of the ground.

Hoffa's idea of the manner in which flat-foot is produced is about the following: The weight ot the body in the erect position is transmitted through the astragalus, which rests upon a slanting surface of the calcaneum; there is thus a tendency to force the astragalus downwards and inwards, in correspondence to the direction of the joint surfaces of the calcaneum. This sliding of the astragalus is checked by the sustentaculum tali and the interosseous ligament, but there is always a tendency of the head of the astragalus to burrow itself inwards and downwards. If the checks are overcome the scaphoid is pushed forwards, and driven upwards towards the dorsum; at the same time the bones in front of the scaphoid are pushed forward, and the heads of the metatarsals are forced towards the dorsum, producing dorsal flexion of the forepart of the foot. The astragalus pushes with its downward and inward turned head, the calcaneum outward; the cuboid is forced upward, and carries the whole anterior part of foot into the abducted position. We thus see how the static laws tend to produce plantar flexion in the astragalocrural joint, dorsal displacement and dorsal flexion in Chopart's joint —abduction and eversion.

What prevents these deformities from taking place are the ligament-apparatus and the solidity of the skeleton. The deformity is most apt to occur during the period of rapid bony growth, say, from the age of puberty to the period of solid ossification, about thirty years of age. This is also the period in which many people exchange the untrammeled freedom of childhood for laborious occupations in which they have to stand a great deal, often carrying weights, often exposed to extreme heat, as bakers for instance; often compelled to work at very long hours, as waiters or store-clerks. We cannot ascribe great influence in the production of this deformity to relaxation of ligaments. The calcaneoscaphoid ligament, which has been accused of getting relaxed and atrophic, and thus allowing the head of the astragalus that rests upon it to sink down, is, as a matter of fact, not found atrophied, but much more hypertrophic and thickened. It has also been contended that the muscles are at fault—especially the tibialis posticus and the plantar flexors. But the muscles certainly play a subordinate part in holding the bones in position; for we know how difficult it is to endure any long-continued strain upon them. For shorter periods and during active movements they certainly hold the bones in position, but their effect is not of the first importance. The main stress is borne by the ligaments and the bones. From what is known about the skeleton in other deformities we have a right to assume that the bones do not always exhibit the proper firmness at the period of youth. There is a certain constitutional defect that forbids the bone to keep pace in its architectural firmness with the growth in length of the skeleton and increasing weight of the adolescent body. In some cases of scoliosis the vertebræ have been found so soft that they could be molded by firm pressure of powerful hands. By assuming that a similar softness may be found in the astragalus, we can easily account for the whole range of symptoms of the static flat-foot. The astragalus again in its turn molds and forms the calcaneum, the scaphoid, and the other tarsal bones into the form they have to assume under the changed static conditions. In fact, the study of flat-foot gives us one of the best illustrations of the transformation forces inherent in the organism, in obedience to which we see how a change in one part of a compound system in course of time, gradually and slowly, but certainly, compels the other parts to mold themselves according to mechanical influences.

PATHOLOGICAL ANATOMY

The lateral malleolus is misshapen, flat, rounded off, and in the more pronounced cases broadened. The greatest changes are found in and around the astragalus.

The cruro-astragaloid joint is in plantar flexion, and the joint surface of the astragalus changed accordingly. Its head projects downwards and inwards, with an additional joint surface for the calcaneoscaphoid ligament. The scaphoid is changed in form, looks somewhat like a wedge, with its base downwards; and the bone is turned on its sagital axis, so that the tuberosity looks downwards instead of laterally, and the whole bone has slid upwards and outwards. The calcaneum on the lateral side is not in contact with the astragalus, but projects outwards; the sustentaculum is often atrophic, and the joint-surface absent; the cuboid is displaced inwards, and the plantar ligaments are somewhat stretched and thickened from the increased strain to which they are exposed. The muscles on the anterior side of the leg, as well as the plantar ones, are atrophic, and sometimes even in a condition of partial fatty degeneration. The Achilles tendon is often contracted. Looking upon the foot in its totality we find it in plantar flexion at the astragalocrural joint; eversion is found in the scapho-astragaloid joint, with displacement of the astragalus downwards; the calcaneocuboid is joint in dorsal flexion.

SYMPTOMS AND COURSE

Looking at the foot from behind, it is first noticed that the foot is more or less abducted; the axis of the leg falls on the inside of the middle line of the foot, which is too broad and too long with a flat back; the inner or medial margin is usually convex, and touches the ground along its whole extent, while the lateral margin is more or less elevated and usually concave. The heel projects unduly, and the Achilles tendon is tense. The foot points inward, and the toes are extended from loss of power in the plantar flexors. The head of the astragalus is projecting under the prominent malleolus internus.

Having made these observations with the patient standing barefoot on a smooth floor, we take an impression of the foot on sooted paper, and observe that the inner or medial margin, which is normally elevated, touches the ground in its whole extent. Next we note how the patient walks, and observe the stilted gait, with the everted and outward turned foot. We find in addition to these symptoms often hyperidrosis, varicosity of veins, and poor development of the crural muscles—all results of faulty innervation and nutrition. After having inspected the patient, we feel with our fingers for abnormal forms of skeletal parts and find that the head of the astragalus is unduly projecting under the prominent internal malleolus. Furthermore, we are apt to discover certain tender points: the tuberosity of the scaphoid is nearly always tender; and less constant is a tenderness over the middle of the dorsum, and one just in front of the external malleolus. Finally, asking the patient to state his complaints, we learn that there is pain in walking, usually relieved after the patient has been in bed for a while. Very frequently the pain is so severe that the physician is misled, and thinks he has before him a case of neuralgia, rheumatism, or osteitis. The patient will often state that it is impossible for him to walk, especially when he has stood for a long time. This depends usually on a reflex spasm of the peronei, soleus, and tibialis anticus, which may be spasmodically contracted from reflex irritation of the articular branches of the anterior tibial nerve, somewhat similarly to the knee pains found in early cases of hip-joint disease through irritation of the articular branches of the obturator nerve.

Flat-foot is a serious deformity, as it incapacitates the individual for his work, the exigencies of which have often produced the deformity. Unless treated it does not get well; but intelligently treated it is curable; unfortunately, you might almost say, it can be relieved by simple mechanical means, which palliate, but do not cure.

TREATMENT

In speaking of this subject attention will be given only to the acquired or static form. Our first object is to overcome the faulty, habitual position in which the patient stands and walks. This cannot be done except by gaining the patient's confidence, as his co-operation is essential. We must therefore show the patient that we take an interest in his case by giving him a careful examination; then we must explain the condition as well as our ability and his degree of education permits. Unless we are endowed with a certain degree of enthusiasm, we cannot secure the patient's confidence and help. We advise our patient to acquire the habit of standing with his feet parallel, not as soldiers stand at attention, with the toes pointing outwards. In walking he is directed to keep his feet pointing straight forward, and to lift himself on his toes. If he is a young man, which he usually is, we give him advice as to how he can favor his general health by proper nourishment, baths, gymnastics, and by avoiding excesses, late hours, and all kinds of dissipation. As certain kinds of movements tend to strengthen the enfeebled muscles, and to press the bones into proper positions, a regular course of movements is prescribed for every morning and evening. I advise my patients to spend 15 minutes twice every day in the following movements, that are performed barefoot; each movement is performed three times, and between each is given a minute's rest. I demand that the movements be made with the greatest accuracy, and that the patient appear once a week to have me inspect his manner of performing them. I observe the mistakes, correct him, and do not desist before I see that he makes them right.

First exercise: The feet are placed parallel to and near each other, and the heels are lifted so that the body rests as much as possible on the tips of the toes. In the beginning the patient may have to support himself partly with his hands on a table or some other furniture.

Second exercise: The same movements with the feet placed so that the toes nearly touch each other, while the heels are directed outwards. The feet should form a right angle with the toes as its apex.

Third exercise: The same position of the feet as in previous exercise; the heels are first elevated, then the knees bent, then straightened, and finally the heels let down.

Fourth exercise: The patient sits on the floor with his back leaning on the wall, and the knees extended; in this position he makes circular movements with his feet inwards.

Fifth exercise: The patient adducts the foot while some one holds back, offering resistance; then the patient tries to hold his foot in adduction while the assistant pulls it back in abduction.

Sixth exercise: Patient stands and walks with the inner margin of the feet elevated.

Special care is taken to instruct the patient to walk properly; he is to set his feet down, heels first, and then lift his body on the toes or ball of his foot, always pointing the toes straight forward. Patients who have to stand much, are advised to change their position often, and occasionally to raise themselves upon their heels. As walking is painful they are advised to use the bicycle, to give exercise and to strengthen the muscles of the leg. Besides these measures to strengthen the muscles, the indication is to correct the valgus position of the foot, even to over-correct, and produce a varus. This can be done only by mechanical means.

Two kinds of support are recommended: the flat-foot shoe, and the steel spring worn inside the shoe. The flat-foot shoe does not look very well; it has a slanting sole, thicker on the inside than on the outside; this elevation reaches from the heel to the ball of the big toe; the heel projects a little on the inside, and reaches a little further forward than ordinarily. When the sole is carefully arranged with an even slant, and when it has a suitable thickness on the inside so that it forces the foot over in moderate supination, it is very useful. If it is too high on the inside the patient walks on the upper leather of the outside, which of course is objectionable.

Of the supports worn inside of the shoes many forms are sold by instrument dealers and bandagists. Some of them run along the inside of the foot; others transversely to the arch. The objection to them is that they press upon the most sensitive parts, and that they do not correct the eversion. To be properly made they must reach from the heel to the ball of the foot, have an elevation on the inside, and be arched in proportion to the patient's foot. If they at once are arched like a normal foot, they hurt and are discarded. It is best to take a plaster cast of the patient's foot, hollow that out a little to make it slightly more arched than the foot is, and make a support on this model. It has to be tried and modified until it fits well, and is seen to tilt the foot over in a slightly inverted position.

It is an erroneous belief that supports alone can cure the deformity. For this purpose massage, gymnastics, and occasional correction are necessary. In moveable flat-foot the above-mentioned measures will suffice.

It is otherwise when the skeleton already has become fixed in its abnormal position. Here the first indication is to mobilize it, which can be done only under anesthetics, as the correction demands considerable force. It is in such cases usually necessary to perform tenotomy of the Achilles tendon. During the correction a crackling sound is heard, and crepitus is felt, for ligaments and adhesions are violently ruptured. The foot is well padded and fixed by plaster-of-Paris bandages in a somewhat overcorrected position, that is, it is inverted and adducted in plantar flexion. In dorsal flexion it cannot be adducted and inverted. After a few days the patient is directed to walk on crutches, later using canes. To avoid the muscular atrophy following long-continued use of a confining bandage, the plaster-of-Paris splint is removed after three or four weeks, and the patient is given a proper support and the above-mentioned course of treatment with massage, gymnastics, attention to the walk, etc. The physician must daily perform correcting manipulations, that now are easily borne, and therefore demand no anesthetics. Formerly the plan was to keep the patient in the splint much longer, and to postpone the active and passive movements of the foot much longer than we do now. The treatment takes from three to five months.

There are certainly some degrees of flat-foot that cannot be treated without bloody operations in the skeleton. But it is a rule in orthopedics to avoid interference with the skeleton, when possible. In the majority of cases our object is to establish the proper static relations. We then gradually get under the marvelous transformation forces of the organism an improvement of the form and position of the bones. When, however, we meet with the highest degree of irreducible flat-foot, we have to resort to certain operations on the tarsal or crural bones.

I shall give a few cases that I have met with, which demonstrate the severity of the deformity, its far-reaching consequences for the general well being of the patient, and the successful effect of treatment.

Case 1.—Patient 25 years of age, lived far away, and consulted me for an alleged neuralgia of both feet. High degree of reducible flat-foot was found. He could not stay for treatment more than a few days; it was necessary to get a steel support made, and to instruct him in gymnastics and massage. When he left, a few days later, he expressed himself immensely relieved, and went home promising to continue the treatment under the care of his home doctor.

Case 2.—Young woman, 19 or 20 years of age, complained of gastralgic attacks. Chemical examination of stomach-contents, as well as other careful examination, failed to throw any light upon the case, until she one day mentioned pain in one instep. It was found that she had a beginning flat-foot. She had grown very rapidly, and was very large and stout for her age, which might account for the development of the disease. She was in good circumstances, so that she could avoid over-exercise. The usual treatment was given, and she lost her attacks of gastralgia at the same time that her foot got well. Over-exertion on two occasions brought back two relapses, which, however, were temporary. She has now been well for months.

Case 3.—A baker, 30 years of age. Last winter he was so bad from alleged rheumatism of the feet that he had been laid up for months. Last summer he had been repeatedly, in coming home from work, unable to walk home from the street-car, a distance of two or three blocks. After two or three months' treatment he can now walk one or two miles without a cane, and can follow his occupation. He brought me Case 4.

Case 4.—Also a baker. After an examination which established the diagnosis, I gave him a laborious explanation of his case, and advice. I learned afterward that he had thought the treatment too exacting and had consulted a "magician." The result is not known.

Case 5.—A woman, 40 years of age, had for the last year had to stand a great deal, and had acquired a moderate degree of flat-foot. After explaining the long duration of the treatment, she consented verbally to enter upon it; but she never reappeared, and I understand that she is now being treated by a Christian Scientist. The result is not known.

A NOTE ON TYROTOXICON POISONING

A CONTRIBUTION FROM THE LABORATORY OF MEDICAL CHEMISTRY UNIVERSITY OF MINNESOTA

A recent case of a small child whose symptoms and death were, even after a thorough postmortem examination, incomprehensible to the attending and consulting physicians, and from whose stomach we were able to isolate the tyrotoxicon of Vaughan, gives evidence which may account for many other cases of infantine mortality. This case was of added importance by reason of the almost co-incident death of another child in the same family with similar symptoms, but whose organs were not subjected to chemical examination.

Prior to the chemical analysis a bacteriological examination of the stomach of the first-mentioned child was made by Dr. Beckman, of the State Board of Health Laboratory, but "no living bacteria could be demonstrated." The stomach was then turned over to this laboratory for chemical examination, and from it we were able to isolate tyrotoxicon, using the method of Vaughan.

The symptoms of these cases as given in the words of Dr. C. B. Shirley, of Weiser,* Idaho, were as follows:

"I enclose a somewhat meagre description of my two cases—children—aged respectively four and one-half and two and one-half years, who died very suddenly after an average illness of 18 hours, and within 24 hours of each other. The first child was taken sick last Saturday morning (10 a. m.) with what the parents considered a slight bilious attack, the symptoms not being of import grave enough to attract more than passing attention. There seemed to be some nausea, dizziness, and slight vomiting. Within eight hours the child was considered much worse, and I was called, and upon arrival found the child unconscious and it died twenty minutes later. Sunday morning the younger one was taken in precisely the same manner. All day the little one sat upon the parents' laps, and was, apparently, not very ill. No temperature, slightly increased heart action, perfectly conscious. It vomited only in the effort to administer a dose of castor oil. Most of Sunday night the child rested very well, sleeping quietly. On Monday the only change was an increased weakness, which continued until the child died at 8 p. m.

"Consciousness having been retained almost to the last, my only conclusion in the matter was that some toxic material must have entered the systems of the children. A consultation with the four physicians of the city was immediately called in the case of the second child, which did not result in a change of my diagnosis. After death an autopsy was decided upon, and held. Every organ of the body (except the brain, as there were no brain symptoms) was thoroughly and carefully examined, and no pathological conditions found to exist. * * * These children have always been healthy, and are from robust Scotch parents."

Inasmuch as tyrotoxicon and the nature of its generation may not be widely known, a brief résumé of some of the ascertained facts may be advisedly stated, and it is the chief object of this note to draw the attention of the medical profession to this potent danger lurking in the very life-food of small children.

Tyrotoxicon is essentially a milk poison, generated, apparently, as a result of the improper care of the milk. It has been found also in various milk products, such as cheese, ice-cream, cream puffs, etc. Its isolation was the work of Vaughan, who first obtained it from certain toxic cheeses in 1883, and who has subsequently separated it from milk.

There are three important series of cases on record, highly illustrative of some of the conditions governing tyrotoxicon generation in milk and cream.

In August, 1886, outbreaks of apparent poisoning occurred in two hotels at Long Branch. The chief symptoms were nausea, vomiting, cramps, and collapse. Investigation by Newton and Wallace fixed the cause on the milk supply and on the milk from one farm alone. The cows at this farm were in good health, and their food excellent. The technical chemical examination revealed no diluents and no preservatives; but, in the words of Newton and Wallace, "the cows were milked at the unusual and abnormal hours of midnight and at noon, and the noon's milking—that which alone was followed by illness—was placed, while warm, in the cans, and then, without any attempt at cooling, carted eight miles during the warmest part of the days of a very hot month."

---

*Sent by Dr. Shirley (Jan. 28, 1903) to Dr. H. M. Bracken, Secretary of the State Board of Health.

In this outbreak, then, the failure to remove the "animal heat," by the usual process of cooling before transportation, was taken as the cause of the fermentative generation of tyrotoxicon, which substance was separated from the milk in considerable quantity.

The second series of cases illustrates causal conditions of an entirely different nature as reported by Dr. Mesic, of Milan, Michigan.

The members of an entire family of farmers were taken successively and to a considerable extent concomitantly ill, exhibiting the following symptoms: Face flushed; temperature 95°-96°; severe vomiting; dilated pupils; constipation; heavy dark coating on tongue; scarlatina-like rash on chest, forearms, and legs below the knees; heavy and persistent stupor, with labored breathing. The father, mother, son, and daughter were attacked. The mother, daughter, and son died. The father gradually recovered under treatment of two grain doses of sodium salicylate, tonics, and stimulants. Later, the salicylate was stopped on account of persistent headache, and drop doses of amyl nitrite given.

Investigation determined that the deaths were caused by milk-poisoning, due, this time, not to animal heat, but to hidden filth. Briefly, the conditions as stated by Vaughan were these: A very old house, without foundation; resting on rotten logs; surface water draining under it; floors of loosely laid boards, allowing scrub-water to run under the house and to accumulate detritus during many years. The milk stood in a buttery. Here a second floor had been laid directly on top of the old rotten one, and a large quantity of putrifying organic matter was found between the floors.

Tyrotoxicon was found in the intestines of the daughter, and also in milk which had previously been treated with a small portion of the organic matter taken from the buttery floor. In this series, then, the generation of the tyrotoxicon was taken as due to the effluvia arising from decomposing organic filth.

A third series of cases occurred at Lawton, Michigan, in 1886. A number of persons partook of ice-cream, and within two hours were taken with the following symptoms: Vomiting, followed, and to some extent accompanied by, purging and watery stools (compare the Milan cases, where constipation was a symptom); temperature, normal (compare 95°-96° of Milan cases); pulse 90-120; pronounced thirst, and strong inclination to sleep, which prevailed some days; in some cases stupefaction.

From this cream tyrotoxicon was separated. The building in which the cream was frozen was an old wooden structure with no basement, etc., similar to the Milan case. The building had been unoccupied for some time prior to the freezing of the cream, and had last been used as a meat-market. The atmosphere was described as like a "privy vault."

It has been our opinion for some time that many of the numerous cases of infantine mortality might be traced to carelessness in handling milk, not, to be sure, a wanton crime, but one born of ignorance, and nourished by indifference and irresponsibility.

The farmers may be at fault, as in the cited Long Branch case, or they may simulate conditions of the Milan and Lawton cases by the use of old buildings for milk storage. These conditions have already been demonstrated, but when the milk has been delivered it has yet to run the gauntlet of careless domestics or thoughtless house-wives before it reaches the little ones.

In our laboratory we have endeavored as time permitted to simulate just a few of the possible conditions which too often occur in the ordinary course of kitchen dietetics, and the results have been a surprise even to us. I will briefly describe these experiments.

1. Chicken intestines were allowed to stand 12 hours in a beaker, then removed. Without washing the dish, fresh milk was poured in, and allowed to remain 24 hours in a fairly cool place. The milk did not sour, but developed a bitter taste, and analysis separated a few crystals yielding chemical reaction of tyrotoxicon. The dish was now carelessly washed with cold water, and

again filled with milk, and returned to the cooler. In 24 hours the tyrotoxicon had again developed.

2. A piece of raw meat was allowed to stand in a cooler until it began to decay; fresh milk was now put in the same apartment of the cooler, and allowed to stand 24 hours. A portion was taken out. This yielded a slightly bitter taste, but no tyrotoxicon could be separated. A portion given to a fifty-pound dog caused vomiting during a period of two days. The remainder stood three days in the cooler. The milk soured, and developed tyrotoxicon. The meat was now removed, and the dish carelessly washed with cold water so that some of the meat yet adhered, and the fresh milk poured in, and again it was placed in the cooler. After 12 hours, one-half was removed and tested. After standing 24 hours the remaining half was tested. The first yielded .0001 per cent tyrotoxicon crystals; the second test yielded .00023 per cent tyrotoxicon crystals, and one-half pint containing .000575 gm. tyrotoxicon caused severe and continued retching and vomiting in a forty-five-pound dog on an empty stomach. In neither case was the milk soured, but an increasingly bitter taste was noted.

3. This was practically a repetition of No. 2 save that raw white-fish was used. Six samples of fresh milk in open jars, a 3-pound white-fish with intestines removed, and a dish of boiled potatoes were placed in a standard refrigerator. After 24 hours one sample of milk was removed and tested, taste was normal, no tyrotoxicon could be isolated. After 48 hours a second sample was yet sweet and normal. The third, fourth, fifth, and sixth samples were increasingly sour, but yielded no tyrotoxicon. By the fifth day the fish began to yield some odor, which increased daily. On the fourth day, six fresh samples of milk were placed in the cooler, which then contained the fish of four days' standing, the boiled potatoes of four days' standing, and three jars of sour milk. The new lot of samples was examined in the same way as the first series. No. 7, after 24 hours, was yet sweet, and yielded normal results. No. 8 was slightly sour, and Nos. 9, 10, 11, and 12 increasingly so. When No. 10 was tested the fish was of seven days' standing and quite odorous. The milk yielded a bitter-sour taste, but no crystals of tyrotoxicon. Three ounces of the milk caused vomiting in a 10-pound cat. From No. 11 on the eighth day we were able to isolate a minute quantity of the toxin, and from No. 12 on the ninth day a larger amount. This would indicate an increasing growth of the tyrotoxicon-producing germ.

On the seventh day three fresh samples of milk were placed in the cooler, which then contained Nos. 11 and 12, which were sour, the potatoes of seven days' standing, which were becoming moldy, and the decaying fish. Tested at intervals of 24 hours all then yielded the toxin.

The fish, etc., were now removed, and without cleaning or airing the cooler a fresh sample of milk was placed therein. Twenty-four hours developed the bitter taste, but no tyrotoxicon could be separated. Forty-eight hours later the milk soured with an increasingly bitter taste, but no toxicon was separable. One ounce given to a cat induced violent vomiting. For two days no food was retained, then the animal gradually recovered. In this milk we then looked for the muscarin-like toxin of Vaughan and Perkin, but failed to find it. Presumably, the poisonous quality was due to the toxins of some form of the colon bacillus existent in the cooler and probably habitant in the fish.

Except as mentioned, the cooler was thoroughly aired and cleaned between each of the above experiments, and control tests of the milk made.

The above conditions are not entirely theoretical. Careless servants often permit food to stand many days in the large modern refrigerators. Indeed, it is not uncommon for a perishable article to remain forgotten in a corner of the "ice-box" till by its odor its presence is recognized. In the meantime the milk of the family, often in open jars, is placed in the same compartment. I should be very glad indeed to receive any statements as to corroborative experience of a practical nature along these lines.

HUBERT C. CAREL.

The Laboratory of Medical Chemistry, University of Minnesota.

VENTRAL HERNIA: ITS CAUSES, PREVENTION, AND CURE*

By James E. Moore, M. D.

Professor of Clinical Surgery, University of Minnesota

MINNEAPOLIS

Gentlemen:—

Ventral hernia is something you will all meet with whether you become surgeons or general practitioners, for, unfortunately, it is a very common affliction. I have not time to speak of all varieties of ventral hernia, and shall limit my remarks to post-operative hernia, especially that following operations for appendicitis.

During the early history of abdominal surgery, which began about twenty-five years ago, ventral hernias were very common results of an incision through the abdominal wall, because our technic was faulty. At that time we employed the through-and-through sutures in all cases, and our wounds were not always aseptic. When an abdominal wound becomes septic, a hernia is almost sure to follow. At the present time we perform the muscle-splitting operation in all interval operations, and have no hernias following; and I shall demonstrate to you to-day that it is possible to perform an operation during the attack in such a manner as to avoid a hernia.

The first patient is a man upon whom I operated about five years ago during tne attack, and he returns to me now to be operated upon for ventral hernia. I performed the operation after the method in vogue at that time, and I fully expected that he would have a hernia. At the present time I should expect to operate upon such a case with very little fear of a hernia. When this man was operated upon we feared to employ the McBurney operation lest the pus could not have free exit, and we thought it necessary to leave the wound wide open, filling it with tubes and gauze. This patient had an additional misfortune which did him no good. After he left the hospital he came to my office with a small sinus, from which granulations were protruding in such a manner as to suggest the presence of a foreign body. I introduced a small hook, and removed a piece of gauze half as big as my hand, which the hospital interne had left in the wound.

You can see that this scar is nearly an inch wide, and that I can pass two fingers down through a gap in the abdominal wall. Over the center of this opening there is only the integument and a little attenuated cicatricial tissue. I know of no truss or mechanical device that will cure this condition; on the contrary it always grows worse, and can be cured only by an operation. Fortunately, when taken before the opening has become too large, the operation yields very satisfactory results.

I begin my incision well over on the sound tissue, and continue it in such a manner as to remove the whole of the scar. It would be a dangerous procedure to cut directly down through the scar, because the bowel is almost certain to be adherent at that point, and would be cut into. I cut carefully down through healthy tissue until I enter the peritoneal cavity at a point where there is no adherent bowel or omentum. This enables me to introduce a finger, which I use as a guide, and gradually cut all the way around until I can now lift the whole scar with the adherent bowel and omentum. I now tie off the omentum with catgut, and carefully dissect the bowel loose. After caretully inspecting the bowel to be certain that I have not injured it I return it and the stump of omentum to the abdominal cavity. I shall now approximate the edges of this large wound, layer by layer, just as one would had this been a primary incision. On the side toward the median line this is an easy matter, but on the outer side the muscle fibers are somewhat atrophied, and the different layers are not very distinct, but you see I am able, by a careful dissection, to get each layer separately all the way around. The peritoneum is approximated with ordinary catgut of medium weight, and the muscular layer I approximate with kangaroo tendon. I use this material in this case because the tension is rather strong, and the tendon is in such heavy strands that it is less likely to cut out. In most cases the ordinary catgut is sufficient. I now pass a row of silkworm-gut sutures through the integument and the fascia of the external oblique. Before tying these I lap the edges of the fascia over, so as to bring a larger surface in contact, and unite them with catgut. I now tie the silkworm-gut sutures and the result is a nice straight wound.

---

*A clinical lecture delivered at the Northwestern Hospital, February 11, 1904.

This operation when carefully done is perfectly safe and eminently satisfactory. (This patient left the hospital in two weeks with a good solid abdominal wall.)

This second patient I bring before you to demonstrate the advantage of our present methods over those of a few years ago. Two weeks ago she was brought in from over one hundred miles in the country, although in the midst of an attack of appendicitis at the time. One week before she was brought in she was taken with sudden, severe abdominal pain and vomiting. The pain was at first all over the abdomen, but most marked in the epigastrium, but it soon settled down in the right lower quadrant. When she arrived at the hospital she had a temperature of over 102°, and a distinct tumor could be felt in the right iliac region. It was very evident that she was suffering from an acute appendicitis with a circumscribed abscess, and after a night's rest she was operated upon. As you can see I made an incision about two and one-half inches long in the usual location. This incision extended down through the integument and fat to the fascia of the external oblique. This fascia was then split in the direction of its fibres throughout the length of the wound, and held apart by retractors, exposing the muscular fibres underneath. This muscle was then split with the handle of a knife parallel with its fibres, which, as you know, is crosswise with the external wound. The edges of the muscle were then held well apart, exposing the deep fascia and peritoneum, which were cut, leading directly into a large abscess. The abscess cavity was irrigated gently with a warm salt solution, after which it was wiped dry with gauze. It was then injected repeatedly with peroxid of hydrogen until it was thoroughly clean. The abscess extended around underneath the cecum, so that I did not deem it wise to introduce a solid rubber tube for fear it might cause a slough at the point where it would necessarily press against the side of the bowel. I therefore introduced a cigarette-drain, which consists of a roll of gauze about the diameter of a lead pencil wrapped in a piece of rubber tissue. The gauze will drain the watery contents of the cavity, and the balance will escape around the rubber tissue. The opening in the peritoneum and deep fascia was then closed close up to the drain by catgut sutures. The muscle fibres were allowed to fall together. Silkworm-gut sutures were passed through the integument and fascia of the external oblique. The edges of the wound in the fascia were then brought together by a running stitch of catgut, after which the silkworm-gut sutures were tied. In short, this wound was closed just the same as if this were an interval operation, except that the cigarette-drain was left in. For a few days there was some drainage of pus, but it rapidly diminished in quantity, and soon ceased altogether, when the drain was removed and the wound allowed to heal. The stitches were removed on the eighth day, and now at the end of two weeks, as you see, the wound is as firmly healed as if there had been no abscess, and she is in no danger of having a hernia. This abscess cavity was never irrigated or disturbed after the day of the operation, and notwithstanding the fact that the edges of this wound were bathed in that foul smelling pus it healed by first intention. The washing with salt solution and disinfection with peroxid of hydrogen, followed by wiping with dry sterile gauze, so overcame the contamination as to permit this happy result. The appendix in this case was completely gangrenous, and sloughed off close to the cecum so that it came out with the pus, and this patient is in no danger of having another attack. The stump could be seen and felt, but no effort was made to apply a ligature, because the walls of the cecum were so infiltrated that a ligature would not have held.

When I operate for appendicitis during the attack I rarely fail to remove the appendix, but I would advise you in your early experience to be content to drain the abscess, leaving the appendix to be removed at a subsequent operation, unless it can be seen or felt without making a special search for it. I am confident you will save more lives in this way. As you gain more experience you will remove it more and more frequently until finally you will learn to remove it safely in almost every instance.

THE HOSPITAL BULLETIN

ST. BARNABAS HOSPITAL

MINNEAPOLIS

AN OPERATION FOR THE RELIEF OF OVARIAN DYSMENORRHEA

IN THE SERVICE OF DR. GEORGE G. EITEL

Mrs. S—— entered the hospital Feb. 29, 1904, She complained of pain in the inguinal regions, which began about 18 months ago, and has been increasing in severity. The pain is of a dull aching character and is excessive during menstrual periods.

MENSTRUAL HISTORY.—She first menstruated at 14. Periods regular and painless until marriage, five years ago, but since then she has had considerable dysmenorrhea which has been growing very extreme. Pain precedes flow one or more days and continues throughout period. Flow is excessive, and lasts about one week. She has never become pregnant.

PHYSICAL EXAMINATION.—The physical examination shows considerable tenderness on pressure over the ovaries, which are increased in size. The uterus is normal in position and size. No adhesions present.

The above is a more or less typical history for the relief of which symptoms the following operation has been advised and performed with considerable success by the writer:

At operation the ovaries are found to be large, and surrounded by a thick fibrous capsule. There are usually no evidences of a salpingitis or oöphoritis, although these may be present. Frequently numerous small Graafian follicular cysts are found beneath the capsule, which have not been permitted to rupture. In the same way the ova have not been able to escape thus accounting for the sterility which is invariably present for a greater or less period.

. The operation consists of dissecting off the entire capsule. The result has been without exception that the symptoms of pain have been entirely relieved. There has not been an instance as yet, however, where the hitherto sterile patient has become pregnant.

It might naturally be objected that adhesions would be formed about the denuded ovary. To this objection it may be answered that, although the writer has carefully followed up the dozen or more cases upon which he has performed this operation, there has not been a single instance of any subsequent trouble. Moreover, he was once obliged to open up such a case for a gall-bladder operation, and was thus able to examine again the ovaries, and they were found to be in a perfectly healthy condition with no signs of inflammation whatever.

REPORT OF A CASE OF TYPHOID FEVER, WITH A BLOOD CULTURE

IN THE SERVICE OF DR. C. H. HUNTER

Mr. M——, male, aged 18, a night watchman and engineer.

FAMILY HISTORY.—Negative.

PERSONAL HISTORY.—Bad typhoid fever ten years ago; otherwise negative.

PRESENT COMPLAINTS.—March 1, 1904, had been feeling badly for past ten days. Aches in muscles and head, loss of appetite, felt feverish, diarrhea.

PHYSICAL EXAMINATION.—Body, prone, relaxed; expression, dull, and listless; face, red; tongue, coated with thick white fur, dry, tremulous; breath, bad; abdomen tympanitic; rose, spots on abdomen and chest; circulation, full and regular; respiration, 22; temperature, 104°; pulse, 90; Diazo, marked; leucocyte count, 7,200; Widal reaction had not been taken. A blood culture was taken to confirm the diagnosis of typhoid fever.

The patient's right forearm was prepared by scrubbing with green soap and water, and a wet dressing of bichlorid, 1-2500 strength, was applied for two hours. Pressure was made by a bandage around the arm at the elbow, and so causing the veins of the forearm to stand out prominently. A medium sized vein on the outer side of the forearm, about three inches below the elbow, was chosen, and a slanting puncture was made with a 12 c.c. aspirating syringe, using a small needle. Every aseptic precaution was taken, and the hands of the operator were carefully cleaned, the syringe recently sterilized, the surface of the skin washed off with sterile water, and 10 c.c. of blood was obtained. This was put directly into a flask containing 250 c.c. of broth. This puncture was covered with a small piece of sterile gauze and adhesive plaster, inconveniencing the patient very little, the only results being a small black and blue spot where blood had extravasated into the surrounding tissue from the vein. The broth was put into the incubator for 24 hours, then examined and sub-cultures made.

The broth gave a general turbidity due to a small bacillus actively motile in a hanging drop preparation examined at the end of 24 hours. Smith tube containing glucose broth showed a general turbidity, but no gas; potato, a scarcely visible, colorless, moist film on surface; litmus milk, no coagulation, alkalinity increased; litmus lactose agar, small white colonies in acid. Dunham's peptone solution tested after 48 hours show in indol. The broth culture gave a good agglutination with tested blood of a known case of typhoid in 1 to 25 dilution.

It is a small short bacillus the size of b. typhosus, very actively motile, non-Gram staining, but staining readily with methylene-blue and aqueous fuchsin, which does not produce spores, which has the cultural characteristics above described, and which agglutinates when tested with known typhoid blood. Diagnosis of the organism, bacillus typhosus.

R. L. Tebbitt,
Resident Pathologist.

HOSPITAL DIET WORK

The Diet Department of St. Barnabas Hospital has been placed during the past few years on a scientific basis, and while not perfect at present it is, we hope, gradually becoming so.

The nurses' curriculum includes a course in cooking, consisting of twelve lessons in the chemical composition of food principles, their relation to one another in food values, the art of retaining the same during the process of cooking, and serving in a palatable and tempting manner. These theoretical and practical lessons are given in the well-equipped kitchens of the Y. W. C. A. under the efficient direction of Miss Dohl, a graduate of the Drexel Institute of Philadelphia. In addition to this the nurses receive from the staff physicians and the directress, lectures and examinations in digestion, absorption, and assimilation of food-stuffs, and their application in health and disease. These courses are supplemented by practical work in the kitchen of the hospital. Each nurse spends six weeks preparing all food for such patients as are on selected, light, or liquid diet, and usually half the patients in the hospital are on such diet.

An entirely new system of serving has recently been established. A serving-room centrally located on the second floor, and containing steam-heated sheet-iron tables and enclosed shelves for dishes and food-receptacles, and a dumb-waiter to the different floors, ensures the meals being served quickly and hot. Each tray is set, prepared, and served by the nurses under the direct personal supervision of the housekeeper.

Eleanor Hamilton.

ST. JOSEPH HOSPITAL

MANKATO, MINN.

A REPORT OF THREE CASES OF PROLAPSUS UTERI, ONE ASSOCIATED WITH GALL-STONE DISEASE.

By C. J. Holman, M. D.

Mrs. F——, aged 38, a large, stout woman weighing 200 pounds, was seen Jan. 30, 1902. She has been a semi-invalid for 12 or 14 years. Her father died of chronic Bright's disease, and her mother of "dropsy" following child-bed. She has four brothers and one sister living and well. She began menstruating at the age of 12 years. The menses were regular though painful. At the age of 19 years she had pneumonia, and at 23 years was married. She is the mother of seven children, five of whom are living and well. Her illness dates back to her first pregnancy and confinement. She says she has falling of the womb, i. e., that the womb comes out of the vagina, and that there is a very irritating discharge which causes her much misery. She has considerable backache low down, and more or less pain in both inguinal regions. The appetite is good and there has been no loss of weight. There is obstinate constipation. Associated with the above are attacks which begin with more or less nausea, pain in the right epigastrium which radiates through to her right shoulder-blade, and frequently vomiting.

Physical Examination.—Panniculus adiposus abundant; chest negative; tenderness over the region of the gall-bladder; sclera somewhat icteric, and there is that peculiar greasy appearance to the skin which is so often seen in patients who are subject to gall-stone disease. There is tenderness at McBurney's point.

With the patient in the lithotomy position the following points are noted: The uterus protrudes from vagina; the cervix is large and has a bilateral tear; there are erosions on the anterior and posterior lips; there is a mucopurulent discharge and incomplete eversion of both anterior and posterior vaginal walls, and hemorrhoids. Vaginal examination reveals a complete rupture of the perineum.

Urinalysis.—Acid reaction; no albumen; no sugar; excessive urates; urea 3½ per cent, and Rossin's test for bile shows the characteristic green line.

Diagnosis.—Gall-stones in the gall-bladder; recurrent appendicitis; complete rupture of the perineum and procedentia uteri.

Treatment.—Owing to the marked obesity of the patient it was thought best to do the vaginal work first, and institute appropriate treatment for the gall-stone disease and the obesity until such time as the patient could return for the correction of her trouble. Consequently under chloroform and ether narcosis the uterus was curetted; the cervix amputated; tracheloplasty; anterior vaginal colporrhaphy; Emmett's perineorrhaphy; and excision of hemorrhoids.

The patient returned to her home at the end of three weeks, and was placed on a limited diet, Carlsbad salts, and Kissingen and Vichy water each alternate day to reduce her weight.

On March 3, 1902, she had nausea and vomiting, and pain in the right side under the 8th, 9th, and 10th ribs. There was tenderness over the gall-bladder and at McBurney's point.

On March 14th she had another similar attack, and again on the 17th.

The patient re-entered St. Joseph's Hospital on April 5, 1902, and on limited diet and waters had lost over twenty pounds in weight. Under chloroform and ether narcosis the gall-bladder was opened through a longitudinal incision four to five inches long and to the right of the rectus muscle. Seven large faceted gall-stones, weighing 15 grams (½ oz.), were removed. The gall-bladder was drained, and the appendix was resected through the same incision.

She made a nice recovery and left the hospital 23 days after the operation, with the fistula closed, and aside from an attack of rheumatism the following winter she has remained well.

Mrs. A S——, aged 56, was admitted to St. Joseph's Hospital on Jan. 17, 1902. She is a well-nourished woman, the mother of four children, all living and well. Since the birth of her second child, 21 years ago, she has been troubled with "falling of the womb." She says that at that time she was torn very badly, and the doctor wanted her to go to the hospital and have her tear repaired, but it was not done. Since then she has given birth to two children, now aged 14 and 18, respectively.

Four years ago she passed the menopause. During the last few months there has been more or less distress in the region of the pelvis and perineum, and after being up and about her duties (housewife) the womb comes out of the vagina, there is an irritating discharge, and occasionally blood, the bleeding having been present for several months. There has been more or less backache and pain in the lower abdomen, and she has to allow herself to remain constipated to avoid incontinence of feces. Mentally she is very much depressed, and fears she has cancer.

Physical Examination.—Inspection with the patient in the lithotomy position shows the uterus to be protruding from the vagina to the extent shown in the picture in Kelly's text-book on Operative Gynecology, Vol. 1, pp. 500-501. The cervix is eroded and bleeds easily, and has a bilateral tear. There is cystocele and rectocele. Further examination reveals a complete rupture of the perineum, uterus somewhat enlarged, ovaries and tubes seem negative; chest negative.

Urinalysis.—No albumen, no sugar, acid reaction, urea 2½ per cent.

After the usual preparatory treatment of rest in bed, laxatives, enemata, and douches, under chloroform and ether narcosis the uterus was curetted, cervix amputated (the tracheloplasty operation after H. P. Newman), Emmett's perineorrhaphy, laparotomy with anterior fixation of the uterus. The stitches were removed on the tenth day, the uterus was in good position, and the perineum had united firmly; and the patient returned to her home on the 14th day, and has made a complete recovery.

Mrs. F. C. P——, aged 34, is a housewife, and the mother of four healthy children, the oldest twelve years of age and the youngest four. Eight years ago had symptoms pointing to tapeworm, and with treatment passed two. For more than four years there has been irregular menstruation, and she complains of a heavy feeling in the lower abdomen, and says the womb comes down and out of the vagina. She is constipated, and has poor appetite, and feels that she does not have the physical strength that she should.

Physical Examination.—Chest and abdomen negative. With the patient in the lithotomy position the cervix protrudes from the vagina, the perineum being completely lacerated. The patient was admitted to St. Joseph's Hospital on October 17, 1901, and on the 18th of October, after the usual preparation under chloroform and ether narcosis, the uterus was curetted, and the operation for complete perineorrhaphy was made. The recovery was uneventful, and the patient returned to her home on Nov. 2, 1901, where the accompanying constipation was successfully treated with the usual medicinal measures.

Remarks.—Cases 1 and 2 were pronounced procedentia uteri, and Case 3 was one of prolapsus uteri of the second degree. The gall-stone disease in case 1 had probably existed for twelve years.

CASES IN PRIVATE PRACTICE

REPAIR OF DEFORMITY OF THE FACE

By James W. Robertson, M. D.,

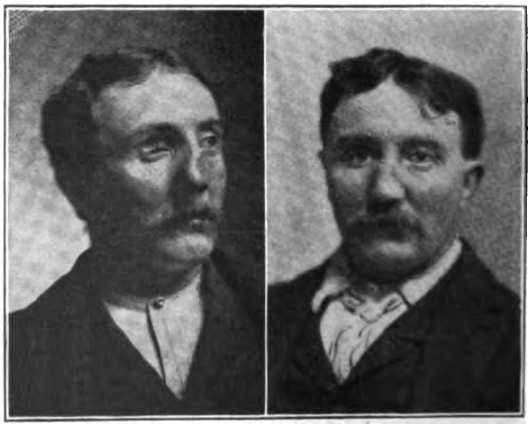
LITCHFIELD, MINN.

Mr. E. T——, aged 29 years, was referred to me by Dr. F. M. Archibald, of Atwater. The patient had lost the sight of the right eye from panophthalmitis following an injury to the eye in early childhood. At the same time he received a serious injury to the nose, disarticulating the cartilaginous septum, which, when it healed, stood at an angle of 75° to the nasal bone. There was a large bony prominence at the lower end of the left nasal bone. The left nostril was completely obstructed by deviation of the cartilaginous and bony septum. The right nostril was almost entirely obstructed from the same source, and the patient had been a mouth-breather up till the time that I saw him.

Operations.—It was deemed advisable to operate upon the eye first. Cocain was injected around and underneath the conjunctiva, and deep into the cellular tissue; and the globe was enucleated without giving chloroform. In this operation I was assisted by Dr. Archibald, the patient afterward coming to me to have his nose treated. The parts being first cocainized by injecting underneath the mucous membrane a solution of cocain and adrenalin, the mucous membrane was dissected up over the bulging septum, and loosened from its attachment by a periosteal gouge and after the cartilaginous septum had been dissected out and the bony prominence cut with the saw and removed, the mucous membrane was drawn down and held in position by a couple of catgut sutures. As soon as the wound was thoroughly healed the remaining portion of the cartilaginous and bony septum was cut through with a septum forceps. A Kyle's perforated metallic splint was then placed in each nostril, and the author's lead splint was placed upon the outside to hold the nose in the new and straightened position. The Kyle's splints were left in about three days, and the lead splint held the nose in position for a week.

At this time an incision was made over the bony protuberance of the nasal bone, and a portion of the bone chiselled away. This little operation was done under thoroughly aseptic precautions, and the wound immediately sealed up with collodion to prevent, if possible, any cicatrix of the skin.

The results in this case have been remarkably encouraging. With a nicely-fitting artificial eye, with a nose which is much straighter than the average, and with perfect respiration through both nostrils, we have an entirely new man. All the operations on this patient were made under cocain and adrenalin anesthesia.



The illustration shows the result attained.

COCAIN AND ADRENALIN INJECTIONS AS AN ASSISTANT IN GENERAL ANESTHESIA

James W. Robertson, M. D.
LITCHFIELD, MINN.

Many times when we are giving an anesthetic and think that we have our patient profoundly under the influence of the drug, we find, upon making a preliminary incision, that the skin is still very sensitive, and it requires more chloroform or ether to produce the required anesthesia, and we are obliged to give a great deal more of an anesthetic than we think good for our patients. I have been in the habit lately of injecting, after Schleich's method, the skin and muscular tissue with a one-half per cent solution of cocain hydrochlorate containing from one to two drams of adrenalin to the ounce. This solution will produce the required anesthesia of the skin, and lessen the amount of chloroform or ether required; in fact it will require only about one-half the usual amount,—just enough to keep the patient quiet. I find it a great help, and think it can be used with advantage in many cases. The adrenalin bleaches the skin and underlying muscular tissue so that there will be no capillary hemorrhage.

In operations for appendicitis and hernia where it is necessary for the operator to be particular about the dissection, it has a very great advantage, as the different layers of fascia and muscle can be plainly seen and the operation made as easily as on a cadaver.

Objections have been raised to this method by surgeons, holding that general anesthesia should not be tried at the same time with cocain injections, claiming that it is decidedly dangerous to administer the two at the same time. This, however, has not been my experience. I have never seen any ill effects from the use of cocain under any conditions.

Dr. J. Clarence Webster, of Chicago, reports in the August number of the Journal of Obstetrics and Gynecology, the removal of an eighty-seven pound cystic fibromyoma of the uterus, which required two and one-half hours for its removal, and the first hour of the operation was with local anesthesia (Schleich's method), followed by a general anesthetic for an hour and a half longer.

I have used cocain in old and young, in patients with dilated heart suffering with chronic nephritis, nervous hysterical persons, and fat people, and I have never seen any bad symptoms which I could attribute to cocain.

The advantages are (1) less chloroform; (2) less pain; (3) less capillary hemorrhage; and (4) a better view of the parts operated upon.

CLINICAL MICROSCOPY

UFFELMANN LACTIC ACID TEST

In the examination of stomach-contents one of the most important tests to be made from the clinician's standpoint is the determination of lactic acid. The test which has for many years been used by the profession as a reliable indicator of the presence of lactic acid, has been the so-called Uffelmann test. This consists in adding a few drops of the filtered stomach-contents to a solution of neutral ferric chlorid which has been mixed with 4 per cent carbolic acid solution. The purple color of the mixture is changed to a canary-yellow color if lactic acid is present in the stomach-contents. This reaction can also be caused by the presence of alcohol, sugar, and phosphates in the stomach-contents, and the test as above described is not reliable. This fact seems to have been lost sight of by many clinicians, and also by some writers of text-books upon diseases of the stomach, who persist in making the test without first preparing an ethereal extract of the stomach-contents. Ewald (Diseases of the Stomach) lays special stress upon the use of the ethreal extract in making the test. Osler and McCrae (Cancer of the Stomach) also point out the necessity for first extracting the stomach-contents with ether, in order to secure a reliable test.

To test the stomach-contents for lactic acid one should proceed as follows:

Take 5 c.c. of stomach-contents in a test-tube; add 10 c.c. of ether; shake thoroughly, allow the mixture to stand until the ether separates from the stomach-contents, and then pour off the ether into a beaker; add 10 c.c. more of ether to the original 5 c.c. of stomach-contents; shake thoroughly, allow to separate, and again pour off the ether into the beaker. Repeat this procedure a third time. The beaker with its 30 c.c. of ether is now put into a vessel containing hot water, and evaporated nearly to dryness. A few drops of water are then added to the residue, and this solution is used in making the Uffelmann test.

It is also important not to use too much of the ethereal extract in making this test. Only a few drops are necessary, and, further, the ferric chlorid solution should not be of a deep purple, but should be so diluted with water as to have a pale-blue color.

IODOPHILIA

Iodophilia is the reaction which certain white cells of blood show when the dried blood-smear is treated with the following solution:

Iodin, one gram.
Potass. iodid, three grams.
Water, 100 c.c.
Gum arabic, 50 grams.

The technic is as follows: A cover-glass blood-smear is made in the usual way, and dried in the air. Without further fixation the cover-glass is pressed down upon a drop of the iodin solution on a slide, and examined with the oil-immersion lens. The red cells are colored a bright yellow, and the white corpuscles are stained about the same color, but in certain diseases there is seen in the protoplasm of the polymorphonuclear neutrophiles reddish-brown granules or a diffuse brownish coloration, and outside of the cells masses of reddish-brown granules. The former is called the intracellular, the latter extracellular iodin reaction. The reaction has been observed with considerable regularity in infections from pyogenic organisms, in septicemia, in toxemias of bacterial origin, such as diphtheria and typhoid fever, in uremia and in primary and secondary anemias. It is absent as a rule in pleuritis, rheumatism, extra-uterine pregnancy, alcoholism, abscesses with free drainage, lead poisoning, cancer, nervous conditions, chlorosis, etc.

Swan (Jour, Amer. M. Assoc., March 12, 1904), in his study of the blood of persons infected with pulmonary tuberculosis, reports that in none of his cases was he able to detect this iodophilic pigmentation in the leucocytes of the blood. This corroborates the findings of Cabot and Locke who were unable to note this phenomenon in any of their tubercular cases.

CASTS IN CHRONIC INTERSTITIAL NEPHRITIS

In no renal disease is it more necessary to discover casts in urine than in chronic interstitial nephritis. The diagnosis of the disease often depends upon their presence, and yet in no renal condition is it quite so easy to overlook them as in this very disease. The casts are usually of the pale hyaline variety. They are short, and occur only in small numbers. Occasionally granular casts are found with the hyaline, but they are of the finely granular type, and are so few in number as to be easily missed unless a large quantity of urine is examined. The writer's method of examining urine where this disease is suspected is as follows:

1. Centrifugalize the urine, or, better still, allow the urine to stand from six to eight hours in a conical glass.
2. Pick up the sediment with a long glass pipette, allowing the urine to run slowly into the pipette rather than with a rush. This is to avoid breaking up the casts.
3. Run the sediment on to two or three slides in a rather thick layer. Do not put on a cover-glass.
4. Examine each slide in turn with the low power of the microscope, the light being well shut off. The control of the light is important, since these pale hyaline casts can be easily overlooked, if the iris diaphragm is opened wide. Cover-glasses covering the sediment are also a hindrance since the casts are thrust out to the edges by their weight, and are often missed in the search.

In searching for casts in this disease it must be remembered that the casts are often present in very small numbers, one two or three often times in a whole slide of sediment examined. They are many times found in one specimen of urine, and absent in another, and are often not seen in the early morning urine, while the midday or evening urine will contain them.

George Douglas Head, M. D.

NORTHWESTERN LANCET

A SEMIMONTHLY MEDICAL JOURNAL

The Official Organ of the Hennepin County Medical Society

W. A. JONES, M. D..................EDITOR

Editorial Office, 515 Pillsbury Building

W. L. KLEIN, PUBLISHER

SUBSCRIPTION, $2.00 A YEAR.

839-840 Lumber Exchange....................Minneapolis

APRIL 1, 1904

DR. JAMES TYSON AT THE ANNUAL MEETING OF THE HENNEPIN COUNTY MEDICAL SOCIETY

Dr. James Tyson, of Philadelphia, is to deliver the address at the annual meeting of the Hennepin County Medical Society Monday evening, April 4th. The dinner will take place at the West Hotel at 7 o'clock sharp. Before the dinner a general reception will take place, in order that the attending physicians may meet Dr. Tyson.

His presence, and his address on "Hospital Organization," will insure a large attendance, and a general invitation is extended to the profession of the state. Those who expect to attend are urged to send in their names to Dr. F. A. Knights, secretary, as early as possible, in order that proper accommodations may be provided.

Dr. Tyson is particularly well qualified to discuss hospital organization. Immediately after graduation he became acting assistant surgeon in the United States Army, serving most of the time until the close of the War of the Rebellion. After the war he entered upon his hospital service, and was made lecturer on Microscopy and Urinary Chemistry. On the organization of the new Hospital of the University of Pennsylvania, in 1874, he was made lecturer on Pathological Anatomy and Histology. In 1876 he was elected professor of General Pathology and Morbid Anatomy, and then to the chair of Clinical Medicine, which he now holds.

Dr. Tyson has been intimately associated with the principal hospitals of Philadelphia, as visiting, consulting and advisory physician. His experience as an editor of the Philadelphia Medical Times, and of the publications of the Pathological Society of Philadelphia, introduced him to the profession as a writer of note. His works in the various departments of medicine are world-known. His Cell Doctrine, Introduction to Practical Histology, Practical Examination of Urine, A Treatise on Bright's Disease and Diabetes, and a Hand-book on Physical Diagnosis are among those found in all medical libraries.

The list of medical societies to which he belongs is too long for review in this notice.

It is hoped the meeting and the discussions will develop the "Hospital Idea" from the educational and humanitarian standpoint. The address should stimulate hospital organization in the cities and the country, and arouse an interest that will be fruitful.

In connection with Dr. Tyson's visit THE LANCET is pleased to announce that he will deliver an address at a public meeting on Tuesday evening at Plymouth Congregational Church, on The Prevention and Control of Tuberculosis. This lecture will be open to the public.

ASBURY HOSPITAL STAFF

During the past winter the directors and staff of Asbury Hospital have been in conference to decide upon the advisability of completing the new Asbury Hospital building. The old building has been overcrowded and sadly in need of repair. The new building is waiting for funds for its construction and equipment. It has been decided that the money must be raised before further work is undertaken, and the officers of the hospital are prospecting for money. The old building must provide for the patients until the new one is ready. Changes will be made that are imperative and the work will go on.

Dr. F. A. Dunsmoor, who has so long been the mainstay of the hospital, and who has devoted his energies and brought his patients to the institution, has been its medical director. This office requires a tremendous expenditure of time, not only at the hospital, but at the many meetings of the executive committee of the board of directors, of which Dr. Dunsmoor was chief medical advisor.

After many years of active service Dr. Dunsmoor has resigned his position of medical director, and with his resignation the office was abolished. Dr. Dunsmoor still remains on the board, and is still gynecologist to the hospital, and his spare time will be devoted to his practice.

At a meeting of the staff at the time Dr. Dunsmoor's resignation was received, Dr. John Warren Little was made chief of the new staff organization, and an executive committee, consisting of the chief, Dr. J. W. Bell, and Dr. W. A. Jones, was elected to assist in the organization and to act as advisory members. The old staff members were re-appointed, and in the event of any change in its membership the staff will select and nominate additions, and will also select internes for service in the hospital.

The past year has been a very gratifying one from a financial standpoint, and when the new building is completed Asbury will be the largest and best equipped hospital in Minneapolis.

RECKLESS PRESCRIBING

A New York journal called Physical Culture, edited by Bernarr Macfadden, evidently believes that physical culture is a cure-all for disease, and that doctors are unnecessary impedimenta to the human race. Mr. Macfadden writes most of the articles and all of the editorials in the issue of the magazine for February, and therefore this issue may seem more personal than some of the earlier numbers.

Perhaps Mr. Macfadden was cured of some chronic disease by exercise after physicians had failed to locate and relieve his complaint; at all events, he has but little time for doctors, and takes everything in the way of articles that reflects upon physicians and their methods. In one of the short articles illustrated with the figure of an athletic young man from Duluth, the heading is, "Cured of Typhoid Fever." The text says the young man rejected doctors and medicines to take up physical culture. Upon the advice of a friend the young man fasted, ate ice, instead of drinking water, and as a result his "fever" became normal in five days, and in ten days he was out of bed entirely. So much for diagnosis and treatment. As a rule it is best to let patients who are such skillful diagnosticians, outline their own treatment and have all the glory of their self-enacted recovery, then when they are actually and seriously sick and undertake to prescribe for themselves death occasionally removes these shining marks before they have time to do much harm.

The main article in the magazine, which is directed against the profession of medicine, is entitled "Scientific Medicine All Guesswork," and if it be true it is a warning to physicians who prescribe drugs on the slightest provocation. Alexander Marshall, a healthy man, called upon ten New York City physicians, gave identical symptoms to each, and from each received a different diagnosis, as well as a different prescription. The name and address of each physician is given, together with a facsimile copy of the prescription and the diagnosis.

If the conversation recorded by the patient is true, even in substance, he must have encountered many of the old-time medical men of New York —men who are below par and behind the times, and men who make diagnoses without an examination of the patient. The explanation of his symptoms and the cause of the disease stamp the physician as an ignoramus or the patient a wilful prevaricator.

One man, a phrenologist, turned the man over to a physician, thereby showing a spark of honesty that was commendable. The other nine medical men evidently made no special examination, but prescribed everything ordinarily used by physicians in indiscriminate prescription-writing. For most of his prescriptions he paid one dollar, which is another evidence that only eminent medical men were consulted.

Such experiments have been tried before, and have usually yielded like results. Some years ago an experimenter wrote to several medical men of national reputation, describing a chain of symptoms and asking for advice and a prescription. Nearly every man gave both, and only one had the common sense, decency and professional dignity to say in reply that he prescribed for patients only after a personal examination.

The article is a slur on the profession, and reads like a write-up, yet such things may occur. There is no doubt that careless and lazy practitioners get into the habit of taking only the patient's statement into consideration, and prescribe anything that comes to hand, doling out pellets regardless of their effect, and trusting to suggestion for the cure. No physician should attempt to advise or prescribe for a patient without an examination, the more thorough the better. A superficial investigation in many cases is sufficient to exclude serious mistakes, but the administration of medicines without examination is useless, worthless, and sometimes criminal. The men of to-day who are studious, thoughtful practitioners are the men who know what they are doing. The reckless, incompetent medical man is the one to whom the dishonest apply, and the result is inevitable: the whole profession is condemned on account of the misdeeds of a few.

"Physical Culture" is too narrow in its condemnation of physicians and drugs, and, if narrow in this, it is not a safe journal to follow for the benefits of physical culture.

BOOK NOTICES

Diseases of the Eye. By L. Webster Fox, A. M., M. D., Professor of Ophthalmology in the Medico-Chirurgical College of Philadelphia, and Ophthalmic Surgeon in the Medico-Chirurgical Hospital. D. Appleton & Co., New York and London.

The special features which make this new textbook conspicuous and valuable are the large number of illustrations, many of which are original with the author, and the fact that the book is up to date, containing material of value taken from recent contributions to the subject of ophthalmology. The illustrations are not only profuse, but the selection is good and they should prove of great value to the reader.

Fox has done a great deal of original work, especially in the line of operating, and this book contains much of this original material.

The reviewer is glad to recommend the book to any one wishing an up-to-date text-boook on this subject, and he believes it will be found of value to the specialist as well as the general practitioner.

Frank C. Todd, M. D.

The Practical Care of the Baby. By Theron Wendell Kilmer, M. D., Associate Professor of Diseases of Children in the New York School of Clinical Medicine, etc. Price $1. F. A. Davis Company, Philadelphia.

This book of 151 pages contains much that is of practical value to young mothers. All instructions for bathing, dressing, feeding, and training infants are complete and definite, leaving nothing to the imagination. It is profusely illustrated, especially the chapters on clothing and manner of holding infants. The articles on emergencies, the various common ailments of childhood, and bad habits are of particular value, while those on preparation of food, and diet schedule for children of different ages, are complete and satisfactory, and will save the physician constant repetition of instructions.

It cannot be said of this little book, as has been said recently of one on a like subject, that its incompleteness renders its value questionable.

Clinical Pathology of the Blood. A Treatise on the General Principles and Special Applications of Hematology. By James Ewing, A. M., M. D., Professor of Pathology Cornell University Medical College. Second Edition, revised and enlarged, illustrated with 43 engravings and eighteen plates drawn by the author. Lea Bros. & Co., Philadelphia.

During the past two years the contributions to the knowledge of the blood, both in its clinical and pathological aspects, have been numerous and in many instances of fundamental importance, hence the value of this second edition in not being a mere repetition of the first.

The author calls particular attention to the reference in the text to about four hundred new monographs that have been added to the bibliographical lists; also to the chapter on technics; the serum tests for blood; and the subject of microscopy; to the morphology of the blood cells; the additions to the knowledge of leukemia; and the esential features of Ehrlich's theories on immunity.

The illustrations are particularly fine, and the colored plates leave nothing to be desired.

The bibliography is made a special feature as the author states that works without such had been of so little value in his studies.

The chapter on the blood in acute infectious diseases is of interest, but indicates that our knowledge is still rather fragmentary.

The studies of the effects of antitoxin on the blood are of particular value.

The blood in typhoid is of special interest. The serum therapy is reported very favorably, which is surprising, as recent studies show it a bacillemia, and not a toxemia.

The value of the Widal is discussed at length.

The printer and publisher have done excellent work.

NEWS ITEMS

Dr. Anna Baker has begun practice at Lead, S. D.

Dr. H. F. Bright has located at White Lake, S. D.

Dr. S. C. Trimble, of Westhope, N. D., has moved to Iowa.

Dr. Charles Sherman, of Sioux City, Iowa, has moved to Luverne.

Dr. H. F. Wright, of Nora Springs, Iowa, has located at White Lake, S. D.

Dr. George Stevens has given up practice at Wykoff, and will locate elsewhere.

Dr. W. O. Tessier, of Terrebonne, will move to the Northwest Territory, Canada.

Dr. E. W. Humphrey, of Minneapolis, Hamline, '02, will locate at Moorhead.

Dr. Paul E. Kenyon, of Wadena, is planning to spend three months at Johns Hopkins.

Dr. W. H. Lincoln, of Wabasha, is arranging to establish and conduct a hospital at Durand, Wis.

Dr. W. W. Smith, of Sunnyside, Wash., has returned to his old field at Wessington Springs, S. D.

Dr. P. Kendall, who formerly practiced at Salem, S. D., is now located at Oneida, in the same state.

Dr. F. C. Selke has located in Oacoma, S. D. Dr. Selke is a graduate of the Milwaukee Medical College.

Dr. F. W. Simpson has moved from Pelan, where he has been practicing a short time, to Winnipeg, Canada.

Dr. Walter R. Schmidt, of Chisholm, who has been spending a few weeks with Drs. Mayo at Rochester, has resumed his practice.

Dr. F. M. Rose, of Faribault, has been made a member of the National Auxiliary Congressional and Legislative Committee of the A. M. A.

Dr. R. C. Kelsey, of White Rock, S. D., has been elected a member of the National Auxiliary Congressional and Legislative Committee of the A. M. A.

Dr. O. S. Merager, of Sioux Falls, S. D., died on the 15th ult. of pneumonia. Dr. Merager was a graduate of the Sioux City (Iowa) College of Medicine, class of '99.

Dr. Charles E. Zerfing, Lead, S. D., who is studying in Vienna, under Dr. Lorenz, writes that he is a member of a club composed of ninety American physicians.

Dr. R. J. Sewall, who left Minneapolis about a year ago to locate in new town of Nashwauk, established and conducted a successful hospital, and has now been appointed local surgeon for the Great Northern Railway.

The physicians of Beaver Head county, Montana, organized a medical society last month, with the following officers: President, Dr. H. A. Bond, of Dillon; vice-president, Dr. L. C. Ford, of Lima; secretary, Dr. F. M. Poindexter, of Dillon; treasurer, Dr. R. H. Ryburn, of Bannock, Dr. M. A. Walker, of Dillon, was chosen delegate.

A number of local medical societies in Minnesota and North Dakota have passed resolutions requesting the president to appoint Dr. W. C. Gorgas, of the U. S. A., a member of the Panama Canal Commission as a representative of the medical profession. Dr. Gorgas had charge of the notable sanitary work done in Cuba after the recent war.

At the quarterly meeting of the Brown and Redwood County Medical Society, held last month at New Ulm, a resolution was passed requesting the county papers not to mention the name of any physician in connection with any case whatever. Dr. J. H. Vogel, of New Ulm, was elected state delegate, and Dr. G. R. Pease, of Redwood Falls, alternate.

FOR SALE

Fifty volumes of Wood's, Appleton's, and Pepper's standard medical works, and also one Harvard chair and physician's instruments are offered for sale. They were the property of a physician who recently died. For prices, etc., address

Mrs. Dr. J. H. Kinney,
Royalton, Minn.

DOCTOR:—Do you wish to sell your practice? For particulars address Cramer-Krasselt Co., Milwaukee, Wis.

NORTHWESTERN LANCET

A Semimonthly Medical Journal

VOL. XXIV APRIL 15, 1904 No. 8

HOSPITAL ORGANIZATION*

By James Tyson, M. D.

Professor of Medicine in the University of Pennsylvania

PHILADELPHIA

It is impossible at the present day to consider the subject of hospital organization from any single standpoint. It may be said that all hospitals have for their object the treatment of the sick, but it dare no longer be said that this is their only purpose. The training of physicians and nurses has of late become an acknowledged object, but the amount of this training, and the method by which it is carried out, must vary with circumstances. Thus, where a hospital has been organized as a part of a medical school, it is evident that the medical and surgical staff must include, *ex officio,* a certain number of teachers in such school, while the thoroughness with which the patients are used for teaching is much greater. If, on the other hand, the hospital has no relation with a medical college, while it may include on its staff medical teachers, there is no reason why the staff should be drawn from such teachers only. There is evident reason why it should include others, since the medical and surgical treatment of the sick is not limited to professors in medical colleges. The advantages of hospital experience should, therefore, not be limited to the medical professor. Especially is this true of city hospitals supported by taxation.

From whatever source the physicians and surgeons of a hospital are drawn, the teaching of students and nurses, should, when possible, be made a part of its purpose. It is indeed rare to find so far-seeing a man as the late Johns Hopkins, who provided that the hospital he endowed so munificently should be an instrument for training physicians and nurses, as well as an institution for the treatment of the sick. Listen to the emphatic injunctions of his letter to the trustees:

"In all your arrangements in relation to this hospital, you will bear constantly in mind that it is my wish and purpose that the institution shall ultimately form a part of the medical school of that university for which I have made ample provision by my will." Again: "I desire you to establish, in connection with the hospital, a training-school for female nurses. This provision will secure the services of women competent to care for the sick in the hospital wards, and will enable you to benefit the whole community by supplying it with a class of trained and experienced nurses."

On the other hand, it requires no lengthy argument to prove that hospital wards, through the number and variety of diseases represented in them, furnish the best facilities for a practical medical education. I am sorry there still remain a few good citizens who are opposed to the use of hospital patients for teaching purposes, fearing that some harm may come to them when thus used. So far from this being the case, I venture to say that such patients have an advantage over others not so used. This advantage lies in the closer study put upon them by the visiting physicians and surgeons, and the more thorough knowledge of the case thus resulting. I can speak from personal experience under both conditions,—that of the visiting physician teaching from his cases, and of one who does not thus teach, and I am sure that, with the strongest desire to do my duty, my cases used for teaching receive a closer study than those not so used. I believe this to be the experience of most conscientious hospital physicians. In confirmation, let me quote also from an eminent and experienced hospital superintendent whose authority is acknowledged throughout this continent.* "The best method of keeping the torch of knowledge lighted is to pass it along from hand to hand. Hence I have little sympathy with those who deplore the use of hospital wards as means of instruction. They should be used for the training of nurses and for the instruction of medical students, and by their very use for these purposes their efficiency for the cure of disease will be augmented." Nay, more, the use of this material should not be limited to the living patient. It is well known that the examination after death often furnishes more abundant and accurate knowledge than the study of disease before death. Much difficulty is often experienced in securing consent for a post-mortem examination from the friends of even those who have received most liberally of the bounty of the hospital and the laborious care of its physicians. Had I the authority, I would require the nearest relative or friend of every free patient to sign a paper agreeing to the making of an autopsy in the event of the patient's death. In one hospital in Philadelphia this is done, and no difficulty as a rule experienced in securing consent.

---

*An address before the Hennepin County Medical Society, Minneapolis, April 4, 1904.

Hospitals cannot be built, equipped, and conducted without money. The source of the needed money is the voluntary contributor or, in the case of the City Hospital, the municipal authority. The hospital supported by voluntary contribution is by far the most interesting and efficient because its organization is more independent of political influence, which is too often characterized by a changing and feeble management. Almost without exception the hospital supported by voluntary contributions is governed by a board of managers or trustees, as they may prefer to be called. This board constitutes the responsible body with whom rests the burden of raising money for the support of the hospital, the administration of its affairs, the determination of the number of patients it can treat, and, in most cases, the selection of its staff. Whether the contributors be organized or not, they become the natural source of selection of the managers, some of whom, at least, should be chosen from this body. A question which has given rise to some discussion is, "Shall the medical profession be represented on this board?" There can be no doubt but that a well trained medical man may be of great service to a board of managers, and there is no good reason why it should not include one or more physicians. The physician and layman look at the hospital from a different standpoint, and naturally get different views, which must be reconciled, and this can be done only by intimate association and interchange of views, best accomplished, I think, by association on the same board.

The question becomes more difficult to answer if it apply to members of the staff. I can see no objection to a limited representation. In a hospital which is part of a medical school with which I am connected, and which has a somewhat complicated organization, there are three members of the medical faculty, *ex officio*, on the board of managers, besides three members appointed by the alumni of the school, while, from the contributors are two more doctors, eight out of a board of twenty-four. This is, probably, five too many, and their places were better filled by business men of broad ideas and full pocket-books. In another hospital with which I am also connected, one of the richest and best managed in the country, there are twelve managers, among whom are no physicians, but once in three months the staff is invited to dine with the managers, and after dinner the whole company adjourns to the board-room, when the physicians are asked for suggestions and expressions of opinion. At another well known hospital the superintendent, physician-in-chief, surgeon-in-chief, and gynecologist-in-chief, and the pathologist constitute what is known as the medical board, which meets monthly, and whose duty it is to advise the trustees in all matters relating to the hospital. These are different methods of accomplishing the same object, any one of which may suffice.

---

*From an address before the Training-School for Nurses at the Hospital of the University of Pennsylvania, February 17, 1897, by Dr. Henry M. Hurd, Superintendent of the Johns Hopkins Hospital, Baltimore.

The board of managers is commonly divided into committees of various importance, as the committee of finance, property, the executive committee, etc. The only one which need concern us is the executive committee, commonly of great importance. This committee represents the managers in all matters needing immediate attention. It is the great comforter of the superintendent. To its members he goes with his doubts, difficulties, and questions of discipline, which they adjust with the authority of the board. The executive committee should also make rules governing the duties of the officers of this hospital, subject to the approval of the board. To be efficient, this committee should meet weekly. It is after conference with it that the superintendent makes the larger contracts for supplies and provisions. In some hospitals there is, in addition, a visiting committee, which examines and approves bills, and inspects the wards and other parts of the building, but this committee is superfluous where there is an efficient and active executive committee. It may, however, relieve the executive committee of some of its duties. The president and the vice-president of the board should be members, *ex officio*, of the executive committee, or invited to attend its meetings with a view to securing thorough familiarity with all its doings.

The executive officer of the board of managers is the superintendent of the hospital. The superintendent must be a person of rare qualifications, among which are ability, firmness, and tactfulness,—qualities most difficult to attain, at least, for the salary which most hospitals are able or willing to pay. As a consequence, in one hospital with which I am well acquainted, after a very unsatisfactory experience with men superintendents, a woman was finally engaged. She was sufficiently satisfactory to have set the policy, and has been succeeded by several others who, with one exception, have held office during their will. In every instance the woman has been one who has had the training of a nurse. She has not herself the charge of the training-school, nor of the nurses, any more than a man superintendent, but has an assistant to whom these duties are assigned. I cannot discover that the administration of this hospital at present is in any way inferior to that of others of which I know, with men superintendents. It must be admitted, however, that this superintendent has always had the assistance of an efficient and active executive committee.

A very important officer of a hospital of the present day is the chief resident physician, and most hospitals of any size have such an officer. He is especially serviceable where the superintendent is a woman, as he relieves her of many duties which would be irksome or awkward for her. As to his duties: In the absence of the visiting chiefs he is the medical authority in the hospital, admitting and caring for all patients until properly disposed of in the ward to which they belong. He is responsible for the proper registration of patients admitted. He decides whether the visiting chiefs or their substitutes shall be sent for. He has charge of the sterilizing, operating, *x*-ray and photographing rooms, and is responsible for the sterilization and preparation of surgical supplies and dressings, and for the condition of all apparatus and instruments in use in the hospital, reporting losses and breakage to the superintendent. He is the physician of the employees, including the nurses, calling the appropriate members of the staff in consultation when needed. He is accountable to the superintendent and executive committee.

The body on which depend the reputation of the hospital and most of its efficiency, is the visiting or attending medical and surgical staff. Of late years the staff has been very much enlarged in many hospitals. Instead of physicians and surgeons, as in the old days, there have been added, in many hospitals, a gynecologist, and where there is a maternity department, an obstetrician, while the specialties,—ophthalmology and otology, diseases of children, skin diseases, orthopedics, and genito-urinary diseases,—are also represented in various ways.

The mode of their appointment must differ with circumstances. I have already said that in a hospital associated with a medical school the members of the staff must be professors in the school, and certain professors must be, *ex-officio,* physicians, surgeons, gynecologists, obstetricians, etc., to the hospital. It goes without saying that their services must be continuous, subject to such interruptions as vacations and sickness necessitate. The best methods of filling such interims of service is by assistant medical officers in the various services, whose duty is to substitute the principals in their absence in addition to such other duties as may be assigned to them. These assistant physicians, surgeons, etc., should be appointed by the managers on the nomination of the medical and surgical staff.

In general hospitals supported by voluntary contributions, independent of the medical schools, physicians and surgeons are commonly appointed by the managers, who may or may not select men connected with the schools. In such hospitals continuous service is not usual, the year being divided into terms of three, four, or six months. In these hospitals assistant physicians or surgeons are not, as a rule, appointed, absences and vacations being filled in by colleagues, or, in case of this course not supplying the deficiency, by appointment, by the managers, of substitutes from the dispensary staff or of others. I am clearly of the opinion that the best interests of even these hospitals would be subserved by a continuous term of service, although the advantages of the hospital may thus be limited to a smaller number. At the same time if an assistant staff be appointed the opportunities of the hospital are thus extended, while the hospital receives better service from young men who have to win their spurs than from overworked superiors, who perform their duties in a prefunctory manner.

I am reminded here of a too common practice of managers of hospitals of this class which diminishes their efficiency. It is the practice of allowing to remain on the staff men who do not perform their duties, to the exclusion of younger and more active men who would adorn the service. An acknowledgement of long and faithful service may be made by appointment on a consulting or emeritus staff, and also by extending the courtesy of the hospital, by which is meant the privilege of coming and going at will without feeling like an intruder. In hospitals connected with medical schools, such practice is less likely to occur, as the professor retires from the staff when he retires from the faculty. Further, I desire to leave a word with physicians and surgeons who omnivorously take every new hospital position they can get, while they continue to hold on to the old ones. This is, doubtless, sometimes done thoughtlessly, but a lapsed thought is well revived if a competent and deserving man secures thereby a chance.

In the case of city hospitals where all taxpayers have a natural right to representation, while the public position of the institution demands, also, that its opportunities be shared by students of medicine under their own teachers, it is but fair that such division of the staff be made that there will be represented in it, not only men connected with the schools, but also physicians and surgeons not thus connected. But in all cases, every member of the staff should be required to do some teaching, using the material in his wards for that purpose.

It is most important that a cordial feeling should exist between the hospital managers and the staff, for upon these two bodies depend the efficiency and reputation of the hospital. This is accomplished by frequent interchange of opinion in one of the ways already mentioned. If this is done there is rarely misunderstanding if the managers are broad-minded, and the members of the staff are considerate.. Sometimes the latter are not. They forget the financial responsibility of the managers when the latter hesitate to grant the money for expensive outfits which the staff think necessary, with the hospital probably running behind a couple of thousand dollars a month. I sometimes think the staff is a little extravagant, especially the surgical members, as when they insist upon a fresh pair of rubber gloves all round every time they operate, and throw about costly dressings as if they could be had for the asking. On the other hand, the staff is responsible for the results of treatment, and ought to know what it wants and it does not do to be too modest. I once heard a manager say that he did not like a physician or surgeon who was not a "kicker." He was a manager after the heart of all physicians and surgeons.

Next in importance to the visiting medical staff, so far as the usefulness of the hospital is concerned, is the resident staff. How to secure an efficient resident staff is one of the most difficult tasks of hospital management. It involves not only the method of appointment, but, also, assignment to duty. I fear the time will never come when all concerned will agree on the method of selection. I have my own convictions on the subject, but I am sorry to say that many differ from me. I am satisfied that the best average qualification of resident physicians is obtained by a fair competitive examination, which, to be sufficient, should be both written and practical. Observe, I do not claim that the best individual resident can be secured by such an examination, because every one who has had experience knows that the young man receiving the highest mark does not always make the best officer. But I mean, given several positions to be filled, we are more likely to secure a larger number of good men by a competitive examination than through the recommendation of interested friends, who, after all, know very little about the qualifications of men for whom they ask your vote. Fairness can of course be secured by an anonymous examination, properly conducted. A method in operation in a hospital medical school with which I am connected, which has worked fairly well, is to send each year to the members of the hospital staff the names of the twenty-five men who receive the highest averages for the first three years. During the fourth year of these students they are more or less under the observation of the members of the staff, who are thus enabled to become familiar with their remaining qualities, and are thus aided in their selection. In the hospital referred to, five men are chosen annually, and, as I have said, the plan has thus far worked fairly well. It would be still better if even further opportunity of thoroughly knowing these men were given before the final selection is made. As it is, the selection may still lie largely in the hands of those members of the faculty who are anxious to have those appointed in whom they are interested.

Even more important from the standpoint of the efficiency of service is the assignment to duty of the resident physician. The term of service for which resident physicians are elected in the majority of hospitals, ranges from one year to two years, and in general hospitals the more usual method is to rotate through the different services, which assigns to the resident from three to six months in each service. This gives him the opportunity to familiarize himself with every variety of special practice furnished by the hospital, evidently to his advantage. On the other hand, the service suffers from the disadvantage of the frequent initiation of an inexperienced resident, whose ignorant mistakes are sometimes harmful to the patient, and often a sore trial to his chief. There seems to be no remedy for this in the majority of hospitals. In one of the best conducted hospitals in this country there are three grades of medical officers: first, the resident in each service, who is a salaried officer and is employed for a number of years; secondly, under the resident there are three assistant residents or internes, who have usually passed through the grade of house medical officers, and, having developed some special fitness for their work, are appointed as assistant resident or internes. These men are in the service one or more years, being eligible to re-appointment, and some of them eventually become residents. Thirdly, under these are yearly appointments known as house medical officers, consisting originally of the twelve honor men of the graduating class. The house medical officers formerly rotated, but the service was unsatisfactory from the hospital point of view. For that reason, at present, the house medical officers are permanent, and spend their entire year in the service which they enter. This must be acknowledged to be the ideal mode of service from the standpoint of the best interests of the hospital. It is clearly not to the best advantage of the resident officers, and in most hospitals it is impossible because of its costliness.

A most important department in a modern hospital is the training-school for nurses, which should form a part of every hospital, even of moderate size. This provides, not only a school for the training of nurses, but also efficient nursing for the hospital, as well as nursing for private families. The school is generally in charge of a superintendent of nurses who directs the nursing as well as superintends the instruction of nurses, taking part also in the latter. In some hospitals the superintendent of nurses is also the assistant superintendent, replacing the superintendent in her absence. In a few small hospitals the woman superintendent also superintends the nursing and the training-school, but such a combination overworks this officer, and detracts from the dignity of the office. It is not to be recommended.

It is not too much to say that with the above objects attained, the training-school is the most valuable contribution of modern times to the treatment of the sick. The management and staff of the hospital should, therefore cordially co-operate to secure its highest development and the best results of training. These results are only another illustration of the good effects of method and training and discipline. On the other hand, it is with nursing as with the profession of medicine, to secure the best results it is necessary that the pupil be actuated by some higher motive than the mere desire to earn a living, and a discipline which rests on hard ruling unaided by such motive will fail of its purpose.

An important department in the administration of a hospital is the purveying department. The victualing of a large hospital is not less important or less difficult than the victualing of a hotel of corresponding size. This is variously accomplished. In some hospitals it is in the hands of a single officer called the purveyor, whose duties are to purchase and deliver provisions, to become familiar with their quality, and to keep accurate account of the expenditure therefor. In other hospitals this duty, so far as the contracting for large supplies is concerned, is assumed by the executive committee in conjunction with the superintendent and a woman called the housekeeper. These authorities examine the proposals and pass upon them, assigning contracts, not necessarily to the lowest bidder, but to the most satisfactory bidder, in determining whom the housekeeper is of great service, because she has become familiar by experience with the reliability of victuallers, and the quality of provisions furnished by them. In one of these hospitals with which I am familiar the duties of the housekeeper are, further, to market twice a week for certain special supplies, to have direction of the kitchens, and to see to the proper preparation and distribution of food. She is responsible for the order and cleanliness of all parts of the hospital except the wards and clinic rooms, and has charge also of the servants in these departments. There are numerous and responsible duties, but in the hospital referred to the housekeeper has an assistant.

This would be a suitable place to consider dietaries, but the subject, though important, is too large to be considered on this occasion. I will only add that dietaries, as a rule, are too liberal and extravagant, and much money is wasted upon them. Thus, until recently revised, the dietary in one of the hospitals of Philadelphia included in the full diet of a ward patient, meat three times a day. Such wilful waste must lead to woful want.

The dispensary, or out-patient, department of a hospital has become a trying problem, more especially in view of the fact that it is often availed of by persons who should pay a physician for his services. In the general hospital, which has not teaching for one of its primary objects, the dispensary was first instituted to relieve the pressure on the wards. When I was a young physician in Philadelphia I do not think there was a single hospital which had a dispensary department, and at the Pennsylvania Hospital where I was a resident physician in 1863-4 we received even fractures of the upper extremities in the wards. In the course of time it became evident that there was no reason why these cases should not sleep at home and return to be dressed as often as necessary, giving place to sick and wounded who must be treated in the wards. So the dispensary was started, and grew. Or of the out-patient surgeons of this hospital informed me that on one day recently, 200 cases were treated in that service only.

In teaching hospitals the dispensary serves another important purpose, viz., a supply of material for teaching students. In my student days the dispensary was the only source of teaching material connected with the school. To-day in the best schools it is supplemented by the hospital. Notwithstanding this, the large medical school is still crying for more clinical material. Hence it cannot afford to discriminate against any applicant for treatment. Even the general hospital independent of such demand, finds great difficulty in discriminating against those able to pay. This, indeed, is the problem agitating the trustees of general hospitals at the present day throughout the country.

The dispensary department connected with medical schools becomes a very complicated and expensive system. Thus at the hospital of the University of Pennsylvania there is a separate dispensary, with dispensary staff for general medicine, general surgery, diseases of
In teaching-hospitals the dispensary serves
children, gynecology, obstetrics, ophthalmology, otology, laryngology, dermatology, genito-urinary diseases and orthopedic surgery, the head of each dispensary being the head of that department in the hospital, with assistants. Such a multiplicity of services can only be successful through a central bureau with a clerk, who makes certain preliminary records, such as the names, sex, occupation, etc., of the patient, and with a physician who shall classify and assign the patients to their respective departments. Where a clerk is in charge, he may be assigned the duty of determining the ability of a patient to pay for services rendered him, and for medicine prescribed for him. It has become quite a general practice of late for hospitals to charge cost price or a small fixed sum for medicines, furnished to dispensary patients, except in special cases.

The rooms for private patients are an important feature in the modern hospital, adding much to its usefulness and efficiency, but also to the difficulties of its administration. No hospital should be built without them. The objects of the private rooms are two: First, they should be a source of revenue to the hospital, to be applied to the expense of supporting free patients; second, they should provide a haven for the well-to-do patient who has not the convenience of a home, or, having a home, cannot be treated as safely or as successfully in it. Withal, the hospital idea in the strict application of the term should be borne in mind. The patient is a guest whose suffering is to be eased, and his wants ministered to, for a sufficient and reasonable sum, and the aim should be to make the cost of the private rooms as moderate as shall secure a fair and moderate profit. As there are always, however, certain very rich persons who demand appointments more luxurious than is really necessary, there may be provided a number of private rooms or suites with bath for which a corresponding charge should be made.

As to the prices which ought to be charged, a few single rooms should be available at $15 a week. This seems to be a minimum fee in the large cities, as the average cost of maintenance per day in a well appointed city hospital is seldom less than $2 a day, averaging the free and private patients together. From this sum upwards, prices should rise to $50 and even $100 or more a week according to the size, furnishing, and conveniences of the rooms. In small country towns where expenses are less, single rooms may be supplied at $10 a week. Some hospitals make an additional charge of $10 for the operating-room in private cases which come to operation. This I do not consider justified. A charge for dressings where their cost exceeds a certain sum is, in my opinion, more allowable. The charge for a private room includes commonly the services of the resident physician, dressings, medicines, and whiskey when ordered as medicine, but not wines or mineral waters. It includes also ordinary nursing, that is, the services of a nurse who has charge of the nursing in four or five rooms. Where a special nurse is desired, as is very apt to be the case, an additional charge of $20 a week is made for this nurse, and $8 for her board, so that the expenses of the private patient rise rapidly. However, they are still in most hospitals a good deal less than corresponding accommodations at a first-class hotel. It is to be remembered that I am speaking of general hospitals, whether associated or not with medical schools. Private and special hospitals are necessarily more expensive because of the smaller number of patients, and relative increased cost per capita. The charges in some of these is, however, excessive.

It will be noted that the charge for private room does not include the fees of the physician or surgeon, since the patient avails himself of the hospital instead of a hotel. The physician or surgeon should, however, remember that the hospital affords him many facilities in the treatment of his private patients, and he should be willing to remit his fees in the case of respectable people in moderate circumstances who cannot afford the expense of a private room and a physician or surgeon as well.

A maternity department rounds up the usefulness of a hospital in several ways. In the first place, it affords a haven of rest with efficient and gentle treatment to a class of patients who deserve our sympathy beyond all others. In the second place, it enables the nurse to perfect herself in a line of nursing which is more indispensable than any other. Last, but not least, it affords a school for medical students in which they can be taught practical obstetrics under safe and efficient guidance before graduating, thus protecting their future patients from accidents which could otherwise be scarcely avoided because of inexperience and lack of practical training. It is a popular department, and can usually be supported more easily than any other because of the sympathy its objects excite, and the comparative ease with which money can be collected for its support. It is especially useful in a hospital connected with a medical school when, of course, the professor of obstetrics will be at its head. The influence of the lying-in department is towards morality and against crime. The temptation to infanticide is diminished, and when in charge of a committee of sensible and high-minded women the future lives of wayward girls may be favorably influenced. Where conditions favor its maintenance a maternity department should form a department of every general hospital.

Hospital finances are too large a subject to be discussed at length on an occasion like this, and I will pass them over with an allusion. With hospitals, as with all else, money is necessary, and the amount required increases steadily with the development of new methods of medical and surgical treatment and the inevitable gradual increase in the expense of living. "Pay as you go" is an adage as applicable to hospital as it is to other expenses. I fear very few hospitals live up to this sound rule. I know of but one or two. On the other hand, certain managers take the ground that it is good policy to be behind and in debt, as it attracts attention, and stimulates effort. I know at least one hospital in Philadelphia that is to-day running behind at the rate of $2,000, and more a month. To go into debt for building is worse; yet I have known several hospitals on which there is now no debt to have been built by stages, with debt contracted for each succeeding stage.

It is hard to advise how to raise money to build and support a hospital. In answer to a question "How shall it be done?" I should answer, in every possible way—by begging, by entertainments, by board of patients when they can pay. Many patients can pay a little who cannot pay much, especially where operations are done, which, if done in private, would cost hundreds of dollars. By calling attention to such facts as these the patient may be able alone, or with the assistance of friends, to raise a small sum towards his board. Much time and work is sometimes wasted on entertainments, the expense of getting them up consuming nearly all, and sometimes more than is derived from them. Yet I have known handsome returns to be derived from entertainments. Much depends on what they are, and how they are managed. The same amount of energy spent in asking contributions from individuals will often be more fruitful.

When a hospital attains a certain age, having been well conducted and kept before the public, it secures its own contributions. Testators in looking for worthy charities to which to bequeath their money, select those best known and best managed, and those with whose object they have most sympathy.

Too often the burden of collection falls on a few. I sometimes doubt whether any person has a right to be a hospital manager unless he is able to give or collect some money annually; but I fear if we made this condition our board of managers would be very small. But, every hospital manager should be a contributor of at least $50.

There are many more details in the management of hospitals which might be included under hospital organization, such as the employment and duties of subordinate officers employed by the superintendent, including engineers, clerks, cooks, orderlies, and the like, which are scarcely appropriate to an occasion like this. Many are self-evident while others vary so much with different executive methods that it would be unprofitable to dwell upon them.

ACUTE OTITIS MEDIA*

By J. G. Parsons, M. D.

BROOKINGS, S. D.

In presenting a paper on this subject the writer submits the following: 1. The disease is of so great importance that frequent discussion of the subject is not amiss. 2. The dangers to which the patient is subjected are so great that we should keep familiar with them. 3. The profession in general look upon middle-ear trouble altogether too lightly.

We are all familiar with the history which the patient gives: "Has had ear ache; it broke and run." About all that seemed to bother the patient was the pain. Now, it is frequently the case that the physician pays about as much attention to the running ear as does the patient. He does not stop to consider all the danger there may be in otitis media, and what may be the result to the patient. A case of appendicitis requiring more diagnostic skill to recognize receives great care and attention, and is the cause of much anxiety to the physician, because he knows that infection of the peritoneal cavity is a possible serious complication. As far as the appendix itself is concerned he knows that it plays no part in the vital economy, and that its being inflamed is not, *per se,* a serious thing. It is what may be caused by the appendicitis that is feared.

In otitis media we have a condition which almost diagnoses itself. The pain is usually fully as severe as the patient cares to endure. The structures of the middle ear are of far more value of themselves than an appendix, and the possibility of infection of the meninges is a serious thing to consider. Reichard and Bezold estimate that 22 per cent of school children are deaf. Pierce states that nearly 40 per cent have otitis media before reaching the age of twelve years. Brühl places the mortality of otitis media at 2.5 per cent' and states that it makes up about 0.6 per cent of the total mortality. From these few statistics we infer that otitis media is a serious disease. The services of the physician are needed in otitis media, first, on account of the pain in the initial stage, which is often terrific, and by proper treatment is readily relieved; secondly, for the treatment of the infectious element of the disease in view of cutting short the inflammation and preventing the complications which present themselves in the shape of necrosis of the tympanic structures, mastoiditis, and meningitis; thirdly, it is of the greatest importance to save the mechanism of hearing from impairment. If the value of hearing were more appreciated by the physician and his clientele, there would be fewer cases of hopeless deafness. A deaf child is handicapped in getting an education, and in school he is very liable to be misjudged by his teachers as a dull or inattentive pupil because he does not bear what is said to him. In later years he is placed in an awkward position socially. His means of earning his living are narrowed by reason of his affliction, and even his life may be lost because of defective hearing.

---

*Read at a union meeting of the Lyon-Linn (Minn.) County and Eastern Dakota (S. D.) Medical Societies, Tyler, Minn., December 22, 1903.

Etiology.—Children are more susceptible. The greater proportion of cases occurs during infancy, mostly during the first three years. This is due in part to the patulous condition of the Eustachian tube, which allows infectious material more readily to enter the tympanum. A predisposition is found in the presence of hypertrophied lymphoid structures in the pharynx, which become easily inflamed. The exanthemata, to which children are liable, furnish a frequent exciting cause. For this reason, and the colds to which children are susceptible, more cases occur during winter and spring months.

The routes of infection are:

1. Through the external auditory meatus by reason of wounds of the drum-head, such as may be made in careless digging out ear wax.

2. Through the extension of external infections, such as eczema, erysipelas, and the like.

3. Through the circulation, as in smallpox, typhoid, and diphtheria.

4. The most common is through the Eustachian tube, by infection of the lymphatic circulation, continuity of tissue, and the forcing of infected secretions from the pharynx into the tube by blowing the nose, sneezing, and careless douching of the nose.

The presence of infectious secretions in the pharynx is a constant menace to the middle ear. Under normal conditions the nasal secretions are capable of taking care of the bacteria which enter the nose in breathing, but when these secretions become vitiated, and we have the condition known as catarrh, we have present in the secretion of the nose and pharynx an abundance of active infectious material. The bacteria which most frequently act as infecting agents are the pneumoccocci, staphylococci, and streptococci, and influenza. Upon the virulence of the germs and the resistance of the tissues depends the severity of the disease. A milder inflammatory process, such as may be set up by relatively few or less virulent germs, produces the catarrhal form of the disease, which is characterized by congestion of the mucosa, increased secretion of mucus without pus-formation. With more virulent germs the inflammatory process is exaggerated, and we have pus-formation.

The pathological changes which take place are hyperemia, round-cell infiltration, exudation of mucus and mucopus. If the infection is very virulent there will be exfoliation of mucosa. The mucosa of the tympanic cavity serves as the periosteum of the bony parts, and is the medium through which their nutrition is supplied. Destruction of mucosa by inflammation leads to necrosis of the bony structures underlying it; hence we may expect that a very severe inflammation, and one which is prolonged, will result in necrosis of the ossicles and tympanic walls.

Coagulation of the fibrinous constituent of the exudates, together with scar-tissue which forms in the process of repair, will form adhesions, which, by interfering with the free movement of the chain of ossicles, and by retracting the drum-head, will impair the sound-conducting apparatus. Pus in a small quantity may, if the cells possess enough vital resistance, be absorbed. In larger and more virulent quantities, the perforation of the drum-head being the direction of least resistance, will allow the escape of the pus. The infection may, by continuity of tissue or by gravity, enter the mastoid cells, setting up a mastoiditis. From the mastoid cells, through necrosed bone or other channels, the infection may extend to the meninges and sinuses of the brain.

Symptoms.—Pain in the ear, usually very acute and of a throbbing, sticking character, malaise, and rise of temperature, which varies from one to four degrees. As in most diseases the temperature runs higher in children than in adults, and the pain is also probably more severe. The infant indicates the location of the trouble by putting his hand to the ear. The pain may radiate from the ear, and be felt in the occiput or neck. The pain may ease for a time, but is usually worse at night, and is increased in severity on coughing, sneezing, blowing the nose, and swallowing.

Hearing is impaired. The tuning-fork shows that air conduction is less than bone conduction. Sounds of a varying character are heard bubbling, roaring, buzzing, whistling, or ringing. They may be dependent upon air bubbling through the secretions, murmurs transmitted from engorged vessels, pressure on the labyrinth, or hyperemia or exudate in the labyrinth itself.

Through the speculum we may see, early in the course of the disease, congestion of the drum-head, dilated vessels, or small hemorrhages. If secretion has accumulated to any great extent, it may be seen pressing against the drum-head causing bulging. This bulging if at the posterior-superior quadrant of the drum-head and accompanied by swelling of the posterior-superior wall of the external canal near that point, is regarded as diagnostic of mastoid complication.

If perforation has taken place an opening of irregular shape may be seen in the drum-head. Issuing from the opening will be seen a purulent discharge. The discharge of pus varies in amount, consistency, and odor. A sanguinolent discharge is likely to come from a destructive process. Fetid odor is caused by the presence of putrefactive bacteria, and is usually found in chronic cases. If the tympanum be inflated air bubbles will be seen in the secretion.

Diagnosis is usually simple. Pain simulating that of middle-ear trouble may be had from an erupting molar tooth. Discharge may arise from a painful furuncle of the external canal. With a speculum the appearance of the drum-head and discharge issuing therefrom makes a mistake in diagnosis almost impossible.

Complications.—Necrosis of the osseous structures of the middle ear is frequently met with in severe inflammations which destroy the nutrient mucosa that surrounds the ossicles and lines the cavity. This is most frequently a slow process, and is associated with the chronic form of the disease. Necrosis of the bony walls may affect the facial nerve. Extension of the infection into the mastoid cells gives rise to mastoid inflammation with the dangers arising from it.

In reality the whole middle-ear structures, from the beginning of the Eustachian tube to the farthest distant mastoid cells in the tip of the mastoid process and in the root of the zygoma, ought to be considered as part of the tympanum in dealing with otitis media. The mastoid cells are so situated that pus tends to gravitate into them when the patient lies down. It is highly probable that no case of otitis media occurs without some mastoid complication, although the conditions may be such that the cells drain readily, and the resistance of the tissues such that no serious results occur. We ought, however, to be on the look out for this complication in all cases of otitis media.

Redness, swelling, pain in the mastoid region, profuse discharge which continues for several days, bulging in the posterior-superior quadrant of the drum-head and the adjoining part of the external canal, and a temperature of one degree or more, continuing for one week atter perforation,—these make a diagnosis of mastoiditis.

Necrosis of the bony tissue of the mastoid readily extends through to the meninges and sinuses. The infection may also find its way through the nerve sheaths and blood vessels.

Headache, stupor, vomiting, temperature, and focal symptoms indicate the presence of cerebral complications.

Treatment.—To prevent the occurrence of middle-ear trouble such nasal and pharyngeal diseases as will render liable infection of the Eustachian tube and tympanum must be attended to. Verily, prevention is of great relative value to cure.

The dismissing of cases of catarrh with the statement that "everybody has it and that there isn't very much to be done with it any way," is responsible for most of the middle-ear trouble occurring after the first few years of infancy.

Hypertrophy, and degenerate conditions of the pharyngeal lymphoid structures, should receive proper treatment. Remove the adenoids and degenerate tonsils, and you have removed a great predisposing cause. Relieve the catarrhal conditions of the nose and nasopharynx, and keep the mucous surfaces clean with alkaline antiseptic douches, and you will have little infectious material to enter the Eustachian tube. Douching must be done carefully, and blowing the nose should be done with caution. Digging away at the external canal to remove cerumen should be prohibited. (This last remark might be meant for some physicians.)

A diagnosis of otitis media having been made, our treatment should be governed by the pathological conditions present. A free movement of the bowels is desirable. In the earliest stage congestion may be lessened, and secretion diminished by the administration of 1-500 grain each of atropin and aconitin, given hourly until their physiological effect has been produced, and thereafter as often as may be necessary to keep up the effect as long as desired. Chloroform vapor may be poured into the ear for the relief of the pain. Application of a 10 per cent solution of cocain and adrenalin solution to the drum-head is often efficatious; also dry heat from a hot salt-bag. Inflation of the tympanum with the vapor of menthol and camphor helps the pain both by the local action of the drugs and the equalization of the air pressure. The drum-head should be inspected to note if there is any accumulation of secretions behind it. If this is the case, or if the drum-head is sclerotic, and other efforts to relieve the pain have failed, free incision of the membrane is demanded. This should be done under strict antiseptic precautions both as to instruments and field of operation. If no secretion is found, the wound is left to heal, which it does readily. If secretion is present, a free enlargement of the puncture is to be made, so as to permit free drainage. If there is no pus present, pack the ear loosely with sterile gauze, and put a sterile dressing on the outside. This is to be continued until healing has taken place. If pus is present, it must be treated like pus in any other part of the body. Free drainage is imperative.

At this point aurists disagree as to the best mode of procedure. For example, Bochner of Lepsic uses the dry method, claiming thereby to get sufficient drainage, give the organ of hearing rest, and avoid infection of other parts. Dry sterile or medicated gauze is packed into the external canal, up to the membrana tympani, secretions having been first carefully mopped out with sterile cotton swabs. The dressings are changed once in twenty-four hours, or oftener if necessary. The majority of aurists, however, use the other method, of irrigating. Some prefer sterile water or saline, others some antiseptic solution, keeping the ear packed between irrigations as in the dry method. There are undoubtedly advantages in both methods. However, if a large amount of pus is present free irrigation would seem to be of advantage. This is of course to be done very gently. A 1-1,000 formalin or bichlorid solution, used until the return flow is clean, and followed by instillation of 10 per cent to 20 per cent argyrol solution, has given the best results in my hands. The argyrol is allowed to run into the tympanum through the perforation by inclining the head, and the external canal is then packed, inserting a small wick through the opening if possible. If the secretions gum up the canal, they are easily removed by the application of peroxide. The discharge must be attended to carefully until it has ceased. To neglect it and allow it to become chronic would be a serious mistake.

If mastoid complications set in, prompt, radical surgical interference must be resorted to. Pierre Brunel lays down the following rules which sound somewhat radical, but which will, no doubt, become more generally accepted not long hence:

"If the discharge is extremely abundant, open the antrum, even if the apophysis is not painful, in order to establish good drainage, to avoid complications and obtain a rapid and radical cure. If the apophysis is painful, or if the posterior-superior border of the canal is affected, the antrum certainly contains pus, and it is absolutely necessary to open it. To delay in such cases is to expose the patient to complications always grave and frequently fatal."

Comparing the conditions with which we have to deal in otitis media with those met with in appendicitis, as referred to in the beginning of this paper, it is the opinion of the writer that the advice of Brunel is as sound, surgically, as the generally accepted principles which govern the surgical treatment of appendicitis.

What is true of the necessity of radical treatment of mastoid complications is also true, only more so, of the cerebral complications which follow it. Within a very short time the mortality in these cases has been reduced by one-half by prompt, radical treatment.

In closing allow me to sum up the centents of this paper thus: Otitis media is a frequent complication of inflammation in the nose and throat. It is not as simple as is often supposed. It impairs and destroys hearing. Its complications, mastoiditis and meningitis, are extremely dangerous. These complications may result in any suppurative case. The disease should be watched carefully and treated carefully. Early diagnosis and prompt, radical treatment of complications are of great importance. The patient should be taught the seriousness of the disease, and to avoid its occurrence or recurrence by proper hygiene of the nose and throat.

THE HOSPITAL BULLETIN

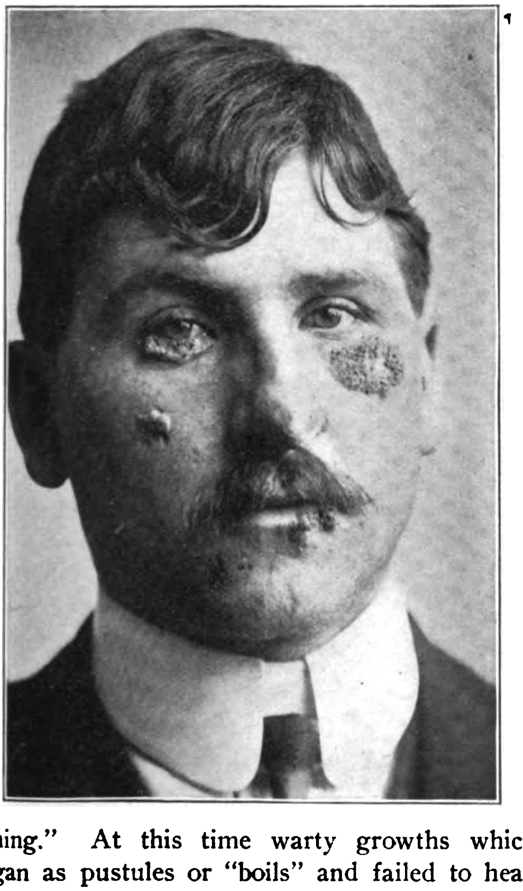
ST. BARNABAS HOSPITAL

MINNEAPOLIS

A PRELIMINARY REPORT OF A CASE OF BLASTOMYCOSIS

In the Service of Dr. F. R. Wright

S——, a German farmer, 26 years of age, entered the hospital March 8th. Family and past history, negative. Present illness: Last August while threshing he infected the fingers of both hands. He was in bed 3 weeks with "blood-poisoning." At this time warty growths which began as pustules or "boils" and failed to heal, appeared on various parts of the body. The lesions were distributed on both hands and feet, the buttocks, lower lip, lower lid of right eye, and of nose, and on cheek below left eye. At time of infection only four of these lesions were present, all the rest, with the exception of those on nose, appearing within one month of the primary infection. Those on the nose appeared four weeks before he entered the hospital. Most of the lesions have been cauterized with chromic acid, but the results were only to make them worse, according to the patient.

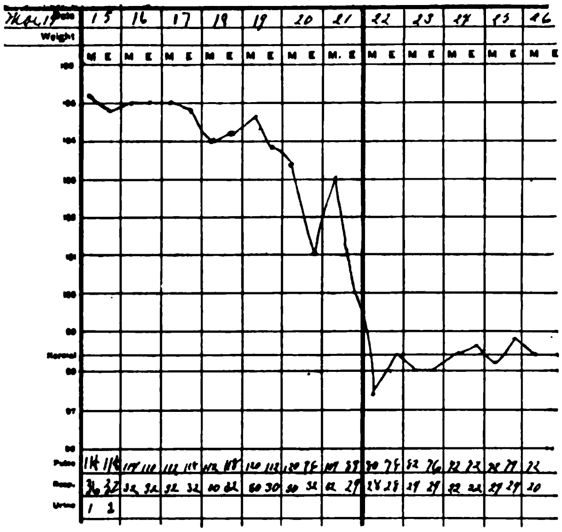


Diagnosis of blastomycosis was made, and confirmed by microscopic examination, and the treatment with potassium iodid was begun at once. Four days later healing of the lesions began, starting from the center as shown in the photograph.

A CASE OF CENTRAL PNEUMONIA OF THE TYPHOID TYPE

In the Service of Dr. E. S. Strout

R. H——, male, aged 14. Taken sick March 12th after a period of malaise of five to six days. He was seen first 7 p. m., Mar. 12th. Temperature then 103.5°; pulse, 108. He complained of headache, and pain in right shoulder. There had been no distinct chill. Bowels were constipated. Physical examination of chest, negative.



March 13, same symptoms present. Temp., a. m., 102.5°; pulse, 104. There was no cough; no rose spots.

March 14, Temp., a. m., 104°; pulse, 108; no cough; mind becoming cloudy; pain in shoulder present; slight nose-bleed. Specimen of blood sent to University for examination; Widal reaction reported absent.

March 15, Temp., a. m., 104.2°, p. m., 104.8°. No cough. Examination of chest, negative. Delirium increasing.

March 16, Removed to St. Barnabas Hospital.

March 17, Examination of chest showed dulness over right lower lobe, a few crepitant râles, diminished vesicular murmur, and tubular breathing. Widal reaction was reported present by pathologist at the usual dilution, although a few bacilli remained motile. Leucocyte count was 25,600.

The mode of onset, the continued and increasing delirium, the presence of a partial Widal, together with the prostration, caused the tentative diagnosis of typhoid fever, complicated by pneumonia, to be made. A blood-culture, however, showed the absence of the typhoid bacillus, and the presence of the pneumococcus. The diagnosis was confirmed by the crisis, which occurred on the ninth day.

This form of pneumonia is described by Osler in his text-book under the name of asthenic, toxic, or typhoid pneumonia.

A clinical chart of the case is given herewith.

NORTHWESTERN HOSPITAL

MINNEAPOLIS

A CASE OF LARGE GALL-STONE*

In the Service of Dr. J. E. Moore.

I present this gall-stone, which I removed from one of the members of this Society two weeks ago. It is the largest gall-stone I have ever seen removed from the gall-bladder, being about the size of a pullet's egg. The history and diagnosis were very interesting, and at the operation the question of choice between cholecystotomy and cholecystectomy had to be considered.

The patient, referred to me by Dr. W. A. Jones, had been in comparatively poor health for some years. She has had some attacks of such severity and of such a character as to lead to a probable diagnosis of gall-stones, but there has been such a constant train of stomach symptoms as to suggest a possible malignant growth in that organ. This contingency was thought of more than it otherwise would have been because the patient had a brother die from carcinoma of the stomach. Her present illness began nearly two months ago with vomiting, tenderness over the epigastrium, chills, and a temperature varying from 100° to 103°. Typhoid was considered, but repeated blood examinations gave negative results, and she had quite a marked leucocytosis. When I first saw her, about one month ago, she looked septic, her temperature ranged between 100° and 102°, the leucocytosis still continued, and a well-marked tumor could be felt in the gall-bladder region. We made a diagnosis of cholecystitis with a distended gall-bladder and gall-stones.

She was removed to the Northwestern Hospital, where she was kept under observation until after the temperature had ranged but little above normal for several days, when the operation was performed. The distended gall-bladder could be readily brought into the wound. It was thickened and flesh-colored, and this one large stone could be felt crowded well into the cystic duct. The common duct was clear, so a cholecystectomy would have been justifiable, but owing to the septic condition I felt that it would be safer to empty the gall-bladder and drain it, taking the chances of a mucous fistula and a possible second operation. A large quantity of pus and detritus were removed. The stone was readily grasped by a long sponge-holder and removed. The wound was closed in the usual way with one large tube in the gall-bladder. The patient has run a normal course. Since the third day there has been a free flow of bile. On the eighth day the tube was removed, and now after two weeks the wound is completely closed. The wound having closed so very early may reopen, but the patient is perfectly comfortable and the temperature is normal, so we hope that the closure may be permanent.

CASES IN PRIVATE PRACTICE

A CASE OPERATED UPON FOR CANCER OF THE JAW*

In the Service of G. Schwyzer, M. D.

A farmer, aged 53, came to my office a little over six months ago with an extensive cancerous growth on his left upper jaw involving almost one-half of the hard palate and the greater part of the corresponding half of the soft palate. The eye being pushed upward, the patient saw everything double, and had to close the left eye when he wanted to see distinctly. The inferior orbital plate was softened, and there was no doubt as to its cancerous change. Under the left lower jaw, in front and at its angle, we palpated an enlarged gland, which after being excised showed carcinomatous infiltration.

---

*Presented before the Hennepin County Medical Society.

*Presented before the Hennepin County Medical Society.

Concerning the anamnesis, we learn that this is another of those cases which was taken and treated for an innocent abscess of the antrum of Highmore.

It was only a very extensive and most radical surgical interfering which could be of any success in this case. In order to have ample access to the fossa sphenopalatina we everted the flesh of left cheek as indicated by the two horizontal scars on the man's cheek. This gave good access to the posterior part of our cancerous bone. This proved to be most necessary, for the fossa sphenopalatina and the two pterygoid muscles were involved with cancerous masses. The processus pterygoideus was therefore totally removed. Extensive use of the ferrum candens in the same region, especially at basis of skull.

To-day a half a year has elapsed since the operation, and you see the man, as yet, in good general condition with a fair cosmetic result. His weight increased from 111 pounds to 153 pounds.

TWO CASES OF SARCOMA OF THE SUPERIOR MAXILLA*

In the Service of G. D. Haggard, M. D

Case 1.—Mr. C. A. Y——, aged near 37; veterinary surgeon; a vigorous and active man. He was struck on cheek by the horn of a bull. Later, after soreness had gone, increasing pain and discómfort began in the same tissues, and under treatment of a specialist the antrum was drained and treated without relief and with growing evidences of tumor formation, which led to operation for removal. Competent surgeons removed all that was possible, pronouncing it sarcoma. Recurrence of tumor and his suspicion that it might be actinomycosis brought the patient to me Aug. 1, 1901. The tumor involved the structures below the eyeball, viz., the side of the nose, the one-time superior maxilla, the roof of the mouth and the right naris. A discharging sinus in the buccal cavity showed the site of the old drain from the antrum. This secretion gave negative results as to actinomycosis. Patient was cachectic; pulse, 100; temperature, slightly raised; appetite, fair, but vomiting almost daily; had lost 40 pounds in weight; could walk slowly three blocks. After ten days weakness rapidly increasing, jaundice appearing, more vomiting; bile in the urine; stools pale; bowels irregular; hepatic tenderness, pain and enlargement indicates metastasis; rides out daily, but can walk only with aid. Pulse at rest is 120.

An incision was made, and tissues taken which I found sarcomatous. He was sent home, and placed on Coley's toxins. Weakness, jaundice, and vomiting increased, and patient was soon unable to raise the head, and was scarcely able to be understood in his whispers. Swallowing was very difficult. Reactions of the toxins were expected to cause death if repeated. I urged continuance. Slow and steady improvement set in, and after six months the patient was seen quite well in our city by many of this society. He went to see Dr. Coley, and was pronounced cured. The tissues of first operation having been found they were sent to Dr. Welch at Johns Hopkins and also to Cornell University for examination. They were pronounced sarcoma, and Dr. Welch said they were mixed cell sarcoma.

Case 2.—Mr. S. O——, aged near 60; farmer, large and vigorous; from same part of state as former case. Seen Nov. 3, 1902. Has had for five weeks or more gradually increasing tumor now involving right upper maxilla. Swelling congests and inflames the eye, extends to ear and to temporal ridge above and downward to alveolar edge. Maxillary muscles limited in motion. Oldest area and most tender is at outer side of the infra-orbital foramen, where a sinus intermittently oozes thin pus. He has lost 20 pounds in weight, and feels weak. Under anesthesia a section of tissues through the skin, subdermal tissues and bone were secured. These revealed to me sarcoma. He was placed on the mixed toxins of Coley. First gave two, then three, and later as high as six and eight, minims each second and third days. Typical reactions were easily secured. Apparent cure was reached in three months, since which one year has elapsed.

Inoperable and recurrent as well as post-operative cases should have the benefit of this treatment.

---

*Presented before the Hennepin County Medical Society.

CLINICAL MICROSCOPY

BLOOD-PRESSURE IN SURGERY

The practical knowledge which a determination of blood-pressure will furnish in the diagnosis and treatment of certain surgical conditions, is a question of interest to all surgeons. The investigations of Crile and Cushing have given an impetus to investigations along this line, as is evidenced by a report of the committee on surgical research of the Harvard medical school, published in the Boston Med. and Surg. Journal of March.

The instrument used in these investigations was the Riva-Rocco sphygmomanometer. It consists of an elongated rubber bag enclosed in a canvas casing, which can be adjusted around the arm, and fastened in place by hooks and eyes. The rubber bag is connected by rubber tubing to a rubber syringe bulb. A Y-shaped joint inserted into the tubing between the syringe bulb and the bag forms the connection for a second piece of rubber tubing, which leads to a mercury manometer graduated to millimeters. The manometer is furnished with an escape-valve closed by a stopcock.

Having placed the manometer reservoir on a level with the heart of the patient the rubber armlet is adjusted loosely about the arm above the elbow, the fore-arm being flexed, and held on the same level as the body. By pumping air into the rubber bag, it is dilated, and presses closely around the arm, finally obliterating the radial pulse. The height at which the column of mercury stands at the moment when the radial pulse is obliterated determines the height of the blood-pressure.

The committee reports that arteriosclerosis, excessive muscular development, the presence of dyspnea, changes of posture, and emotional disturbances, all cause marked fluctuations of blood-pressure in normal individuals. Under circumstances other than these the Riva-Rocco apparatus gives results sufficiently accurate for clinical purposes. In cerebral compression and surgical shock the most definite alterations in blood-pressure appear.

Under such conditions the value of blood-pressure determinations as an indication for or against operation is increased. The committee concludes that the adoption of blood-pressure observations in surgical patients does not at present appear to be necessary as a routine measure.

LEUCOCYTE OR PUS CASTS IN URINE

In most works upon the urine little or nothing is said about this variety of renal casts. Some authorities go so far as to classify leucocyte casts among the forms of pseudocasts. However, it seems most probable that they are a true form of cast, and should be so classified. Leucocyte casts are occasionally seen in the urine of nephritis in small numbers. It is not unusual to find a few leucocytes intermingled with the renal epithelial cells in the epithelial casts encountered in acute nephritis.

Now and then one sees a specimen of urine in which leucocyte casts predominate over all other varieties, and with the exception of a few hyaline and granular casts are the only variety of casts met with in the sediment. In a case of chronic nephritis now under the observation of the writer the sediment is filled with leucocyte casts. Some of the casts are short and broad, others long and narrow, and all are crowded with leucocytes.

It is not always easy to differentiate between epithelial and leucocyte casts. If the nuclei of the enclosed cells can be plainly seen the distinction is quickly made, since the leucocytes are multinuclear-appearing cells, while the renal epithelial cells possess one nucleus only. The nuclei in the renal cells are usually larger, and fill up more of the cell than the nuclei of the leucocytes. Another point of distinction is that the protoplasm of the renal epithelium seen in casts often contains granules of a yellowish color. Running a drop of dilute acetic acid under the cover-glass will bring out the nuclei of the leucocytes when they cannot otherwise be seen.

The presence of large numbers of leucocyte casts in urine points either to a suppurative nephritis, an abscess in the kidney, or renal tuberculosis. Leucocytes clinging to hyaline and granular casts may often be seen in acute exacerbations of a chronic nephritis or in a chronic parenchymatous nephritis. In such conditions the leucocytes will be seen in large numbers free in the urine sediment.

Geo. Douglas Head, M. D.

NORTHWESTERN LANCET

A SEMIMONTHLY MEDICAL JOURNAL

The Official Organ of the Hennepin County Medical Society

W. A. JONES, M. D..................EDITOR

Editorial Office, 515 Pillsbury Building

W. L. KLEIN, PUBLISHER

SUBSCRIPTION, $2.00 A YEAR.

839-840 Lumber Exchange.....................Minneapolis

APRIL 15, 1904

DR. TYSON'S VISIT

One hundred and sixty-three sat at the annual banquet of the Hennepin County Medical Society. Of this number a dozen persons, members of the boards of directors of hospitals, superintendents, and the regular members of the Society, listened with interest to Dr. Tyson's paper on Hospital Organization. It was gratifying to see the members of the homeopathic faculty sprinkled among the so-called regulars, and every one seemed in harmony.

The trend of discussion and comment was all in a serious vein, as the subject of the paper would indicate. To those who were familiar with and trained in hospital work the essayist gave no new suggestions. Those who previously were indifferent to the details of hospital organization, must have gathered much valuable information.

The paper and its talented author will doubtless make an impression in the Northwest, and arouse more than a passing interest. If the public could be educated to the hospital idea, could know the value of proper methods in organization of all hospitals, and could be induced to subscribe for the erection and maintenance of hospitals, then the interest would spread. Minneapolis needs one large hospital, built and endowed by some one of wealth. This is done in other cities, why not here?

The plans suggested by Dr. Tyson, as employed in the great hospitals of Philadelphia, would give some individual a life-work and an enduring monument. To plan and carry out the details of hospital construction and subsequent management is a prospect fascinating and inviting.

Dr. Arthur B. Ancker, the able and energetic superintendent of the St. Paul City Hospital, added his endorsement to the essayist, and told of the upbuilding of a great hospital.

The Hennepin County Medical Society is to be congratulated on the opportunity of entertaining so distinguished a man as Dr. Tyson. It may also congratulate itself upon its energies and enthusiasm.

Physicians have had only a small voice in the organization of many of our hospitals. The majority of them have been managed from their inception by philanthropic boards, who become interested in charity work and who learn, after years of experience, that many of their efforts have been wasted. They have individual opinions upon construction and detail management that, when combined with others whose opinions are at variance, result only in confusion and disorder. Yet these same well-meaning boards, when in the work, decline to accept the advice or suggestion of medical men until a modern building, under the advisory eye and perhaps management of medical men or trained superintendents, gives them an object-lesson that carries with it new suggestions that are difficult to adjust with their old ideas.

A hospital, as Dr. Tyson suggests, should be managed by mixed boards, in order that all departments may profit by skilled specialists—the physician and surgeon to suggest plans for construction, details for the comfort and convenience for the sick, and the control of the training of nurses; other specialists for the equipment, household and commissary department; and business men and women for finance. The end of all is a well-balanced institution, founded on a solid basis, and surrounded with a sufficiency of commercial atmosphere to enable the hospital to make all ends meet or to gather a surplus for future needs. A modern hospital managed by business principles will readily meet its expenses in any large city. It must, however, be up-to-date in every particular and with the idea of caring for the sick and guarding the interests of the physician. A successful hospital has as members of its board of directors, physicians who are capable of advising or a staff of physicians who are permitted to carry on a controlling influence, and whose recommendations are accepted as coming from one in authority. Hospitals are supported largely by physicians, who, seeing an attempt on the part of the managers to maintain a well-regulated and disciplined institution, support it by their patronage and assist in its management by suggestions and advice.

It is to be hoped the interest of hospital boards will be awakened by the paper of Dr. Tyson. THE LANCET is pleased to be able to give its readers this valuable paper.

THE LODGE DOCTOR

In many of the smaller, and a few of the larger, cities of Minnesota, and probably many other states, physicians are employed by the year to attend members of lodges; and the service may be extended to the entire family of the member, including the servant. In one of the prosperous cities north of Minneapolis the contract doctor is gradually absorbing the greater part of the population. Applicants for membership in the "Red Men Lodge," the "Woman's branch of the Red Men," and the "Eagles," are pouring in rapidly, in order to avail themselves of the services of a physician at exceptionally low rates, a sort of a bargain-counter proposition.

The members of these lodges pay at the rate of $1.00 per year per capita; for the entire family, including the servant, the rate is $2.00 per year. The average is about forty cents per capita per year. One-sixth of the population of the town are members of the three lodges, and for their medical care they pay three physicians each year $1,350. If this rate were applied to the entire population, the sum total would amount to $7,900. As there are eleven physicians in the city the ultimate net income to each would be a ridiculously low one. Residents who are wealthy or well-to-do are joining the societies for the purpose of receiving practically free medical attention.

This is a deplorable state of affairs, and deserves the same criticism that is applied to the dispensary system in large cities. Physicians who are engaged in lodge work of this kind are lowering their own dignity, as well as the dignity of the entire profession. The young man who expects to acquire a practice should avoid such pitfalls, for under such practices his entrance into professional life is blotted with an indelible stain. The probabilities are that after a few years of lodge work he will grow weary of the demands made upon him and the small fees for the services and his resignation will follow his awakening into a consciousness of wrong doing.

What self-respecting physician can afford to accept the responsibility and care of sick men for one dollar a year?

There is no excuse for any physician, young or old, to accept an appointment as lodge or club physician, unless it is established on a living basis. No matter how earnest a physician may be, he must be reasonably compensated for his time and talents. If he fails to establish his business relations with his patients he will be unsuccessful in many things.

The man to whom the people look for authoritative statements is the man who puts a good price on his work and opinions.

The Stearns and Benton County Medical Society has sent notices to the lodge physicians in Stearns County, and, if they fail in their defense of their lodge positions and its compensations, they will be dropped from membership in the Society. This is the attitude the Society should assume. It will do more toward elevating standards and restoring professional equilibrium than any amount of back-biting invectives.

The people, even the lodge people, will see the necessity of such measures, and will seek medical advice from men in good standing. The remaining members who continue to employ the club physician will eventually cause him anxiety, and destroy his peace of mind.

Club prices, wholly unreasonable in amount, should be abolished, and all work done by physicians who are reasonably competent and skillful should be paid for at least to equal the amount earned by any skilled laborer.

The Medical Record calls attention editorially, to the importance on the part of every physician of seeing that the vaccine virus used by him is pure. Practically the only safeguard is to be found in the honor of the firm that makes the vaccine.

REPORTS OF SOCIETIES

HENNEPIN COUNTY MEDICAL SOCIETY

F. A. Knights, M. D., Secretary

A stated meeting of the Hennepin County Medical Society was held at the Andrus Building, March 7, 1904, Dr. C. H. Hunter, president, in the chair, and about sixty members were present.

The Executive Committee reported by Dr. J. W. Bell, chairman, that arrangements for the annual banquet had been under way, Dr. Tyson, of Philadelphia, having accepted an invitation to address the society on the subject of Hospital Organization. On motion the executive committee was given power to act in all matters pertaining to the banquet.

It was moved by Dr. E. J. Brown, seconded by Dr. G. D. Haggard, that wines be not served at the banquet. This motion was lost.

The applications for membership of Dr. Jno. W. Mintener, Hamline, 1900, 521 Pillsbury Bldg.; Dr. Jno. Watson, Bellevue, '74, Hopkins; Dr. F. Laws, Chicago Medical, '74, 1801 Riverside Ave.; and Dr. C. W. Hack, U. of M., 1900, Andrus Building, were read and referred to the Censors.

The Censors reported favorably upon the names of Dr. J. C. Sessions, Dr. O. A. Fliesburg, and Dr. Chas. F. Quinby; and they were all elected to membership in the Society.

The transfer card of Dr. Daniel Kriedt from the society at Faribault was read.

Dr. A. B. Cates was elected an additional delegate to the State Association, and alternates were chosen as follows: Drs. E. S. Strout, C. G. Weston, C. A. McCollom, W. P. Spring, and F. C. Todd. Dr. Thos. McDavitt, secretary of the State Association, addressed the Society, reminding it that the season of per capita tax was at hand. The secretary-treasurer was instructed to forward dues as soon as possible. Dr. McDavitt stated in response to a question that the free-list in the State Association, formerly consisting of members of more than twenty-five years' standing, had been abolished.

Dr. G. Schwyzer presented a patient after resection of the superior maxilla for sarcoma. (See page 150.)

Dr. Staples presented a case of suprarenal tuberculosis, with photograph. Dr. Wright and Dr. White presented a case of actinomycosis, with microscopical slides.

Dr. G. D. Haggard reported two cases of maxillary sarcoma cured by injection of Coley's fluid. (See page 151.)

Dr. G. D. Head presented specimen of urine containing albumose; demonstrated the analysis.

Dr. J. E. Moore presented an extremely large gall-stone, with report of the case. (See p. 150.)

Dr. W. R. Murray read a paper on "The Submerged Tonsil and Its Operative Treatment," which was discussed by Dr. Bishop and Dr. E. J. Brown, who presented specimens of tonsils removed. Dr. Todd and Dr. Watson and Dr. Murray closed the discussion.

Dr. A. Lind read a paper on "Mechano-Therapy," the discussion of which was postponed for lack of time.

The Society then adjourned.

BOOK NOTICES

A Practical Treatise on Nervous Diseases. By F. Savary Pearce, M. D. Colored frontispiece; twenty-one illustrations in the text. New York: D. Appleton & Co.

Pearce has written a small book on Diseases of the Nervous System in which the doubtful points on neurology have been curtailed or eliminated. The chapters on anatomy and physiology have been blended in order to make clear the understanding of the anatomy and functions of the various parts of the nervous system. Condensation is a feature of the work, and one may get the important points without too much reading.

Dr. Pearce was for many years associated with Dr. S. Weir Mitchell, and naturally pays attention to management and treatment of nervous cases.

Chapter IV gives general and specific directions for the prevention of nervous disease, and the acquirement of nervous health; and it pays particular attention to the giving of baths, the use of water, exercise, how to "rub," massage—its indications and contra-indications—hypnotism, rest-cure, and climatology. The other chapters are devoted to the general diseases of the nervous system.

The illustrations are, for the most part, new and original.

The book is published by the Appletons in their usual excellent style.

Diseases of the Nervous System. By H. Oppenheim, M. D., Professor at the University of Berlin. Translated and edited by Edward E. Mayer, M. D. Price, $5.00. Philadelphia: J. B. Lippincott.

The second American edition of Oppenheim's great work on nervous disease has just been issued. The first edition has been revised, enlarged, and added to; the new additions to this work have never been published elsewhere, and have added fifty-four pages and many new illustrations.

The work embraces practically all of the well-known diseases, as well as those which have lately been discovered in the field of neurology. Oppenheim's description of diseases of the spinal cord, brain, and peripheral nerves, as well as the neuroses, is full, exhaustive, and authoritative.

The text is clear, the illustrations good, and the index and references sufficient for the student, practitioner or writer.

As a comprehensive treatise the book is all that can be desired.

NEWS ITEMS

Dr. O. S. Werner, of Lindstrom, has moved to Center City.

Dr. K. Gryttenholm, of Zumbrota, expects to locate in Wahpeton, N. D.

The contract for building the new hospital building at Vesta has been let.

Dr. J. M. Ekrem has moved from Nome, N. D., to Minot, in the same state.

Dr. McReynolds has left Mooreton, N. D., to locate in Underwood, in the same state.

Dr. R. J. Hill has returned to the city after several weeks' absence on the Pacific Coast.

Dr. J. W. Wells, who has been practicing a short time in St. Peter, has moved to Rochester.

The Bethesda Hospital Association will probably build a new hospital at Crookston this year.

Dr. Edmund Lalonde, who has been practicing several years at Eden Valley, has located at Richmond.

Dr. D. J. Cooper, Hamline, '03, of Owatonna, has located at Dent, a new town in Otter Tail county.

Dr. O. C. Trace, of Little Falls, is about able to resume his practice after several weeks' very severe sickness.

Dr. C. M. Pinckney, who has practiced in or near Meadow Creek, Montana, for twenty-nine years, died last month.

Dr. G. I. Smart, who has been spending the winter at Tucson, Arizona, has returned to his home in Blue Earth City.

Dr. W. W. Mayo, of Rochester, who has been spending several weeks in Mexico and California, will return home this month.

Dr. William E. Ground, of Superior, Wis., and Miss Leilla Bell, of Washburn, were married on March 22d, and went south for a month's trip.

Dr. Adolph O. Heiberg, of Northfield, died on March 18, at the age of 48. Dr. Heiberg was a graduate of Jefferson Medical College, class of '93.

Dr. Geo. H. Shrodes, of Excelsior, has located in Minneapolis, and has his office at 502 Pillsbury Building. Dr. Shrodes is a graduate of Rush, '96.

Dr. T. H. Wimer, of Marshall, who has been doing post-graduate work at the New Orleans Polyclinic for the past three months, will soon resume his practice.

Dr. T. J. Caldwell, of Wisconsin, has joined his brother in practice in Blackduck; and together they will conduct the hospital which was owned by the late Dr. Godfrey.

The Cass County (N. D.) Medical Society met at Fargo on March 29th, and elected the following officers for 1904: President, Dr. F. J. Campbell; secretary, Dr. Morris; treasurer, Dr. G. A. Carpenter, all of Fargo.

Dr. Frank J. Irving, of Duluth, died in a New York hospital last month under peculiarly sad circumstances. He almost purposely contracted consumption in order to study the disease, but his constitution was too frail to give much hope that he would be successful in his efforts.

Dr. Charles F. Warner, of Mankato, celebrated his 50th anniversary of the practice of medicine on April 1. A large number of physicians of Mankato and surrounding cities, together with prominent citizens, tendered Dr. Warner a banquet; and it is delightful to read the highly commendatory words spoken of Dr. Warner as a physician, a man, and a citizen. He has practiced thirty-five years in Mankato.

NORTHWESTERN LANCET

A Semimonthly Medical Journal

VOL. XXIV MAY 1, 1904 No. 9

A CASE OF ULCERATIVE ANGINA, WITH THE FUSIFORM BACILLUS AND SPIRILLUM OF VINCENT IN THE EXUDATE*

By S. Marx White, B. S., M. D.,

Assistant Professor of Pathology and Bacteriology, University of Minnesota; Pathologist to the City and St. Barnabas Hospitals, Minneapolis

MINNEAPOLIS

In 1896, Vincent[1] published a study of 47 cases of hospital gangrene, in the exudate of all of which he found a bacillus, averaging 4 to 8 mikrons in length, and about 1 mikron in thickness; usually straight, sometimes slightly curved. Certain preparations presented specimens in the form of an elongated S. The shorter forms were 3 to 4 mikrons long, but there were also filamentous forms. The appearance resembled somewhat that of bacillus edematis maligni, the extremities of the bacilli, however, not being square, but narrowed or rounded. Many of the bacilli were in the process of division, or joined end to end. In many bacilli there were clear, irregular vacuoles, of unequal size, neither round nor oval, their form excluding the idea that they were spores. Ziehl-Neelsen's method did not show spores. Involution forms were not rare, especially where antiseptic dressings were applied. The vacuolated and deformed fusiform bacilli, with tapering ends, were very similar to a species of noncultivable bacilli, occasionally seen by him in certain diphtheroid anginas. The organism decolorized by Gram's method. Associated with the bacilli above described, though inconstant, and proportionately few in number, as a rule, was a fine spirillum, staining with difficulty, not taking Gram's stain, and which could not be cultivated. This spirillum was found in 40 of the 47 cases.

In 1897, Bernheim[2] published 30 cases of angina and stomatitis, in all of which a fusiform bacillus and spirillum were found; and Vincent[3] reported 14 similar cases in 1898. Mayer[4] says: "Tarassiewicz[5] states that he has seen the report of the Children's Hospital of the Duke of Oldenburg in St. Petersburg, 1893, by Dr. Rauchfuss. The latter presented cases of ulceromembranous angina with sharpened bacilli and spirilla, and the photographs prove their identity to those of Vincent. According to Tarassiewicz the credit of the priority belongs to Rauchfuss. Be the credit of priority whatever it may, these anginas are referred to by all writers with the name of the bacillus of Vincent attached."

Niclot and Marotte[6], in a recent article giving a reference list of 60 papers, have described exhaustively the bacteriology of the condition, the characteristics being briefly as follows: The fusiform bacillus and spirillum are present almost constantly in combination; the fusiform bacillus is swollen at the center, the extremities being pointed; length, 6 to 12 mikrons, usually straight, but may be curved or bent. It is found in irregular masses. The authors state that it is motile, but Vincent did not find it so. The bacilli decolorize somewhat irregularly by Gram's method, losing the stain for the most part. Simple basic stains color well, and occasionally the involution forms stain irregularly, showing vacuoles and granules, but no spores.

---

*Thesis read before the Minnesota Academy of Medicine, December 2, 1903.

The spirilla are two to three times the length of the bacilli, slender, and of equal thickness throughout. They are observed singly and in groups, and are sometimes seen in a tangled mass. They are motile, and may retain their motility for several hours, but it diminishes rapidly on exposure to air or cold. The staining reaction is similar to that of the bacilli, but they decolorize invariably by Gram's method. Where the disease process is superficial, the spirilla may be absent, but in the deeper lesions the combination of bacillus and spirillum is invariable.

In the exudate, examination may show other organisms present, such as the streptococcus, pneumococcus, and bacillus coli communis; but in the deeper parts only the bacillus and spirillum are found. Cultivation of the organisms is difficult. Niclot and Marotte succeeded in some of their cases in getting cultivations in fluid media or the water of condensation of solid media. Their cultures were never pure. Silberschmidt[7] recommends a 1 per cent acetic-acid bouillon. Inoculation likewise fails to give results, though Niclot and Marotte, using the organisms combined with the streptococcus, after the "third passage," recovered them from the mucus of the dysenteric discharges of a dog.

I have but a single case to report, but the rarity of reports, up to the present time, in this country, together with the necessity of differential diagnosis from diphtheria and syphilitic conditions of the throat and mouth, justify placing the case on record at this time.

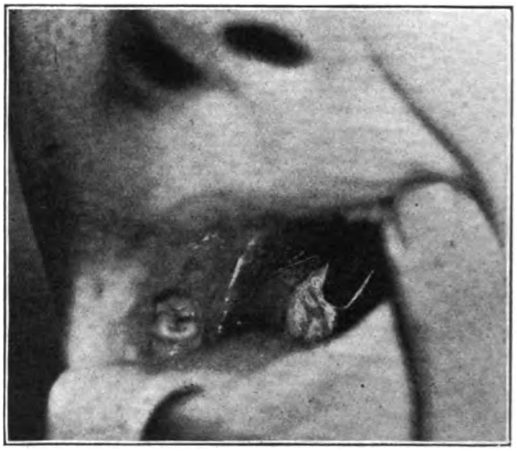
CASE

F. T. B——, male, aged 22.

Family History.—Father healthy, aged 52; three brothers, all living and well; mother died at age of 33, the cause not definitely known to patient.

Previous Illness and Personal History.—Measles at 8 years of age; acute bronchitis at 18; tonsils always somewhat enlarged since 18 years of age, with some soreness of tonsils with every attack of coryza, and tonsillitis every spring and fall; after the last attack, in May of this year, the right tonsil remained deeply fissured from above downward on the mesial aspect; denies venereal infection; uses tobacco moderately; last July after a slight injury to skin of arms from climbing a tree, he first noticed some small scaly patches on the elbows; similar patches were found on the knees a little later.

Present Illness.—Oct. 10, 1903, the tonsils became painful, with some swelling and congestion of right. Oct. 11th, tonsils very sore, and marked pain on swallowing; in the evening, felt feverish, and had a chill lasting about a half hour, followed by sweating and headache. This condition of fever with occasional chilly sensations, sweating and headache, usually coming on toward evening, lasted till Oct. 14th. Oct 14th, exudate appeared on right tonsil, covering an area about the size of a split pea; temperature that evening was 101° F., pulse 99, with headache, general feeling of weakness and exhaustion, painful deglutition, and a sharp throbbing pain in right tonsil; muscles and glands of right side of neck swollen, painful, and tender. Oct. 15th, the same symptoms as day before; restless night; exudate on tonsil now covered an area about ¾ inch square; exudate was a grayish-white color, could easily be scraped off, but would reappear very soon. Tonsil was now ulcerated and pitted in places. Temperature reached 101° F. in the evening; the pulse, which was 89 in the morning ran up to 115 during the forenoon, and remained about that rate for the rest of the day. Patient



Right tonsil, showing ulcerated surface covered with exudate (the uvula has been outlined in white to show the relationship more clearly).

was seen by a competent physician, and a diagnosis of probable diphtheria made, and cultures taken. (These cultures were later reported negative. The throat was swabbed with tincture of iodine. Patient at no time took to his bed.) Oct. 16th, I saw the patient for the first time. He had passed a good night, had no more headache, and had a normal temperature, some pain in tonsil on swallowing.

Examination. — Patient slender, but strong and vigorous; cheeks, flushed; temperature, 98.6°, and pulse (patient sitting) 96, full and strong; lymph glands in right side of neck and beneath right angle of jaw were greatly swollen and tender; right tonsil easily palpable from without; lips somewhat dry; tongue red and heavily furred in center; right tonsil red and swollen so that it reached nearly to median line, but mesial surface ulcerated and covered with a thick, grayish-white exudate, which was soft and smooth on the surface, but granular and crumbling beneath. The exudate is readily removed by a swab, the underlying surface showing red and angry beneath, and bleeding when touched. The exudate covered an area nearly 2 cm. in diameter, and the margins of the ulcerated patch were red and raised. The left tonsil was moderately swollen, but the remaining parts of the throat were free from exudate. Examination of the skin shows a mild attack of undoubted psoriasis, involving extensor surfaces of knees and elbows, with an occasional lesion on the chest. Oct. 17th, exudate had reformed to practically the same extent as on previous day; temperature and pulse normal; soreness nearly all gone, and constitutional symptoms absent.

Treatment.—Lithium salicylate, ½ dram per day for three days, and a 0.5 per cent aqueous solution of formalin to be gargled in throat every 2 hours.

Oct. 26th, a large defect on inner surface of tonsil, with a small area, about 6 mm. in diameter, covered with a thin shiny soft, somewhat "slimy" looking exudate. Oct. 27th, exudate less than on previous day, and is nearly gone.

Direct cover-slip smears were made, and a culture on Löffler's blood serum taken October 16th, when I saw the patient first. I had seen a case some six months or more before, in which Dr. Chowning of this laboratory found the organisms of Vincent, and the appearance of the throat in this case led me to suspect the condition at once. Smears were stained with Löffler's methylene-blue, dilute carbol-fuchsin, and Gram and Bismarck brown, the resultant picture being precisely that described by Vincent and others. The exudate seems to be composed almost of a solid mass of the bacilli and spirilla mixed. The cultures on the Löffler's blood serum on the following day showed a variety of bacilli and staphylococci, a number of the bacilli being fusiform and resembling the organisms seen in the smears, but close search was necessary to reveal the spirilla. There appears to have been no multiplication of the latter, and little if any of the former. No diphtheria bacilli were found. Oct. 17th cultures were taken from the exudate on the ordinary media, and on the following specially prepared media:

a. Bouillon + 1 per cent acetic acid.
b. Bouillon + 0.5 per cent acetic acid.
c. Bouillon + 0.1 per cent acetic acid.
c. Bouillon + 1 per cent phosphoric acid.
e. Bouillon + 0.5 per cent phosphoric acid.
f. Bouillon + 0.1 per cent phosphoric acid.
g. Agar media of same composition as broth media listed above, were also prepared and sloped. A rabbit was inoculated intravenously and a guinea-pig intraperitoneally with some of the exudate.

Oct. 18th the following results were noted: *a.* Hanging drop preparations from the acetic acid broths, and from Dunham's solution show non-motile bacilli and cocci, and a number of spirilla showing very slow progressive movements. *b.* Smears made and stained from all media show bacilli and spirilla only in the 1 per cent and .5 per cent acetic-acid bouillon, and in the Dunham's solution. No growth was observed on the solid media, and stained smears from these media failed to show organisms. Subcultures made from these original cultures on the 5th day and again on the 31st day showed no growth of the bacilli or spirilla, although large numbers of both forms were found in the original 0.5 per cent and 1 per cent acetic acid bouillon, both on the 5th day and on the 31st day.

The morphology of the bacilli is as follows: Non-motile, in broth or peptone cultures; size

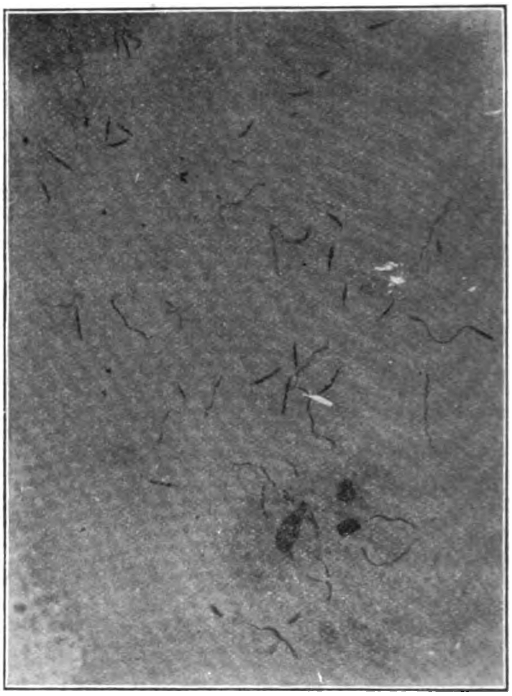
4 to 10 mikrons in length, sometimes nearly 1 mikron broad, single, or more frequently in direct smears, two together, end to end, and may grow out into short filaments. The organisms are frequently somewhat curved, and taper toward the ends, which are rounded.

They stain deeply and evenly with anilin gentian violet, and dilute carbol-fuchsin, but with Löffler's methylene-blue, Bismarck brown, Unna's alkaline methylene-blue, etc., a number of faintly stained areas can be made out in the majority of the bacilli. These areas vary from two to four or five in number, are irregular in form, not sharply outlined, and in these respects do not resemble spores. Staining for spores with Ziehl-Neelsen's carbol-fuchsin gives negative results. Proper stains fail to show the presence of flagella.

With Gram's method a few of the bacilli retain the stain, though feebly and unevenly, while the greater number decolorize completely. The spirilla are found intimately associated with the bacilli, though not as numerous. They have no definite arrangement with relation one to another, nor in relation to the bacilli, but when occasionally a spirillum is found with its end in contact with a bacillus the resemblance to a bacillus with a long wavy flagellum is very striking.

The spirilla may attain a length nearly twice that of the bacilli, but are much thinner and narrower, tapering to a sharp point. The thickness varies from about .2 to .4 mikrons. The spirals present from 2 to 5 or 6 turns, sometimes being coiled and twisted into various patterns. When numerous they may form tangled masses. They stain faintly but evenly with all stains, the best results being obtained with dilute carbol-fuchsin with anilin gentian violet and with Unna's alkaline methylene-blue. With Gram's method they decolorize immediately and invariably. They show slow progressive movements in hanging drop up to 24-hour-old cultures. No flagella can be demonstrated.

The animal experiments gave negative results throughout. The rabbit developed "snuffles," which was affecting other rabbits in the same room, and huge abscesses in the buttock and shoulder. Careful search in this rabbit, which was killed Nov. 27th, failed to show the organisms described either in smears or cultures. Cocci were present in the pus, and presumably were present in the exudate injected.



Smear from the throat of F. T. B——. Stained with dilute carbol-fuchsin.
X 900.

Various writers have given names to this affection, and Mayer quotes the following: Diphtheroid angina; ulceromembranous angina; ulcerous angina; and "spirochaten-bacillenangina." Fischer[8] reports two cases under the title of ulcerative angina and stomatitis.

The clinical symptoms of the affection are, as a rule, slight. The exudate, or deposit, may exist for some time without being noticed. The lesion is usually situated on the tonsil, but the gums, lips and tongue may be invaded. The exudate is thick, white, soft on the surface, is readily removed, and leaves a bleeding surface, somewhat excavated. The breath is usually foul, salivation is present, and some pain on swallowing is felt. The duration appears to vary from one to six weeks.

PROGNOSIS.—The prognosis is good, complications not being common, although a fatal case is recorded of ulceromembranous stomatitis complicated by infectious purpura. Endocarditis may follow the condition, and one case with appendicitis and another with pseudorheumatism are recorded. In Nicolle's[9] case there were edematous spots, painful to the touch, with erythema and discoloration of the skin on the upper part of the face. The condition is of extreme interest, because of the confusion which may arise between it and diphtheria on the one hand, and syphilis on the other. The resemblance to syphilitic sore throat is at times striking, and the examination of direct smears affords us the only available means of making a differential diagnosis. Salomon[10] records two cases associated with syphilis, in which characteristic syphilitic lesions appeared after the disappearance of the exudate.

In differentiating from diphtheria, one is struck by the failure of the usual culture methods employed to reveal the nature of this affection. A serum culture sent to the diagnostic laboratory of the State Board of Health was reported as containing "a variety of bacilli, and staphylococci. No diphtheria bacilli found." This is due, as we have seen, to the failure of growth on ordinary media.

The only certain way, then, to make a diagnosis at present is by means of smears, and direct smears should be made from every case of exudative sore throat in which bacillus diphtheriæ is not found. It is probable from the rapidity with which reports are appearing that the condition is not uncommon.

We can say little positively regarding the relationship between the organisms and the lesion, since it is as yet impossible to cultivate it in pure culture and to produce lesions in animals.

REFERENCES

1. Vincent: Annales de l'Institut Pasteur, 1896, p. 488.
2. Bernheim: Deutsche Med. Wochenschrift, 1897.
3. Vincent: Bulletin de la Soc. des Hopitaux, Mch. 11, 1898.
4. Mayer: Am. Jour. Med. Sci., February, 1902, p. 187.
5. Tarassiewicz: Russ. Arch. f. Bakt. and Bath, 1899, p. 412.
6. Niclot and Marotte: Revue de Medicin, No. 4, Apr. 10, 1901.
7. Silberschmidt: Cent. f. Bakt. Bd. XXX. No. 4.
8. Fischer: Am. Jour. Med. Sci., August, 1903.
9. Nicolle Normandie Med., June 1, 1899.
10. Salomon: Deut. Med. Wochenschr, No. 34,

THE SUBMERGED TONSIL AND ITS OPERATIVE TREATMENT*

WILLIAM R. MURRAY, PH. B. M. D.

Instructor in Ophthalmology and Otology, University of Minnesota

MINNEAPOLIS

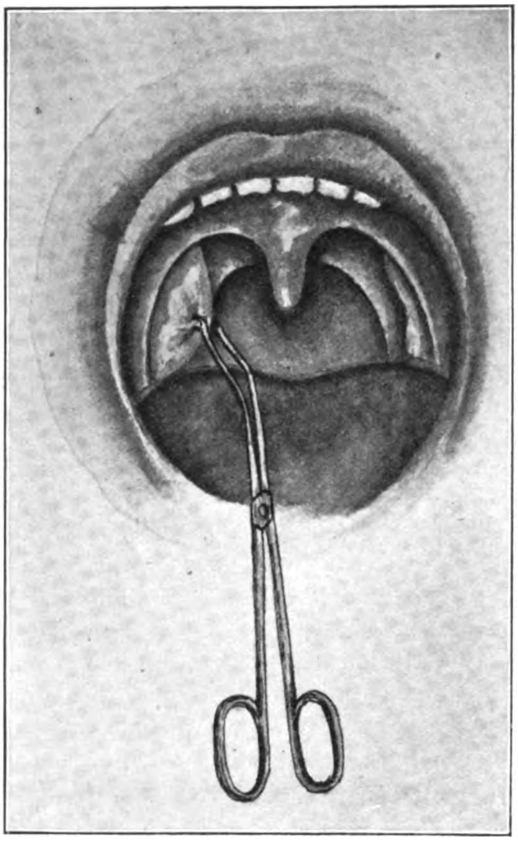
A rough classification of the subject of hypertrophied faucial tonsils may be made as obstructive and non-obstructive. To the former belong those forms of hypertrophy in which the gland is enlarged to such an extent that it projects inward and toward the median line beyond the pillars of the fauces; and which may be enlarged to such an extent that it interferes with swallowing and sometimes with breathing, and at times is markedly enlarged from an acute attack of inflammation. To the second class belong those that do not project beyond the pillars of the fauces, and do not interfere with swallowing, and while in some cases the diseased tissue may fill the entire tonsillar fossa and be adherent to surrounding structures, on the other hand it may be so slightly hypertrophied as to require a careful examination and the use of forceps and probe to detect the diseased condition. It is to this latter class that I desire to call your attention.

This form of diseased faucial tonsil has been termed *submerged* or *embedded* tonsil, a term which was first applied to it by Pynchon of Chicago, and I believe it is an important factor in the etiology of many of the diseased conditions of the upper air-passages, which we are called upon to treat, and that in many cases the lack of success in the treatment is due to the fact that the importance of this condition is overlooked.

It frequently happens that patients who are subject to recurrent attacks of tonsillitis, nasopharyngitis, beginning or chronic aural catarrh, or recurrent attacks of laryngitis, will present on examination a slight enlargement of the faucial tonsil, not sufficiently hypertrophied to extend beyond the pillars of the fauces, and yet this may be the etiological factor of the condition of which they complain. A careful examination will reveal the fact that this tonsillar tissue is the seat of a low grade of chronic inflammation, and on drawing forward the anterior pillar of the fauces, or upon grasping the tonsil with the tonsil forceps and drawing it inward toward the median line, the diseased condition of the gland is at once manifest. After drawing the gland well out from its bed between the pillars one will often be surprised at the amount of diseased tissue that is present, and there will generally be found one or more openings or crypts from which retained and decomposing secretion can be expressed by pressure with a probe. These openings will sometimes be found to extend into the substance of the tonsil and to communicate with larger cavities, which may be filled with the decomposing matter.

---

*Read before the Hennepin County Medical Society, Minneapolis, March 7, 1904.



Long, flat, sunken faucial tonsil (submerged). The right tonsil is the same size as the left, but is drawn out with the forceps.

On account of the chronic inflammation present in the gland the pillars of the fauces will often be found to be adherent to the tonsillar tissue, and the pillars themselves will often share in the inflammatory condition, and sometimes the fold of mucous membrane from the anterior pillar will extend backwards partially covering the tonsillar tissue.

The tonsil may be firm and fibrous in structure, it may be flat and fill the tonsillar fossa extending level with the pillars of the fauces, or it may be irregular and lobulated and soft in structure, and if the patient is made to gag during the examination the gland will be seen to project much more prominently toward the median line.

The etiology of this form of chronic inflammation of the faucial tonsil does not differ from that of the more commonly observed form of tonsillar hypertrophy. It is usually, however, observed during adult life. It may be due to repeated acute or subacute attacks of congestion of the gland; it may be a sequel of hypertrophied tonsils present during earlier life; it may be associated with the so-called gouty or rheumatic diathesis; or it may be that it is an irritable stump remaining after a former tonsillotomy.

The symptoms of which the patient complains may not be referred directly to the throat, but the low grade of chronic inflammation, which is always present in the diseased tissue, may either directly or indirectly give rise to one or more of the following conditions:

Eustachian Salpingitis.—This may result as a direct extension of the congestion and inflammation to that structure, which, if neglected, will result in a chronic catarrhal otitis media, or it may give rise to an acute catarrhal otitis media followed by infection and an abscess in the middle ear.

A chronic pharyngitis will be present in a large proportion of cases as a result of the repeated congested condition of the fauces.

Laryngitis.—The patient will sometimes give a history of acute or subacute attacks of laryngitis, but the laryngeal condition, in these cases usually takes the form of a congestion of the laryngeal muscles, especially those concerned in the approximation of the vocal cords: namely, the cricothyroid, crico-arytenoid, thyro-arytenoid, etc.; and it manifests itself in a weakening or tireing of the voice on prolonged effort, and is especially evident in cases of singers, public speakers, etc.

Gastric disturbances may also occur as a result of the retained secretion, and decomposing particles of food which become lodged in the tonsillar crypts, undergo decomposition, and thence pass into the alimentary tract.

TONSILLITIS.—While many of these cases will not complain of acute tonsillitis or an acute inflammatory condition of the throat, a proportion of them will give a history of being subject to attacks of acute inflammation of the gland; and the severity of the symptoms present during these attacks, will vary from a slight feeling of soreness in the throat to the conditions usually present in a violent attack of tonsillitis with its marked enlargement of the gland, edema of the soft palate, high temperature, etc.

GENERAL INFECTIOUS DISEASES.—It has been demonstrated by recent investigation that pathogenic germs may pass directly from the tonsillar tissue into the blood and lymph circulation, thereby causing general systemic infection; and while the relationship of diseased tonsillar tissue to the subject of systemic infection, and especially in regard to the acute infectious diseases, is one that requires further investigation, nevertheless considerable attention has been directed, during past years, to the subject of chronic inflammation of the various lymphatic structures of the upper respiratory tract as an infection atrium for tuberculous and other pathogenic germs, and numerous investigators have demonstrated the presence of tubercle-bacilli in diseased tonsillar tissue. Walsham found tuberculosis of the tonsil present in 20 out of 34 consecutive post-mortem examinations held at the City of London Hospital for diseases of the chest, and concluded as follows: 1. That the tonsils instead of being almost immune from tuberculous disease are very frequently affected; 2. that tuberculosis may be primary in the tonsil; 3, that the tonsils are very frequently secondarily affected in persons suffering from chronic pulmonary tuberculosis; 4, that when the tonsils are tuberculous, the cervical glands receiving the lymphatics from the organs are also frequently affected with tubercle.

Numerous cases of endocarditis and of suppurative pleurisy and abscesses in different parts of the body, have been reported as having had their origin in an abscess in the tonsil; and when we consider the frequency of a cervical adenitis in cases of tonsillar inflammation and the direct connection of the lymphatic glands of the neck with the faucial tonsils through the lymph channels, and the fact that the crypts and cavities, with their decomposing material, serve as incubators for the growth of microörganisms, the presence of a diseased tonsil should at once suggest itself as a source of danger and the indication for its removal should be evident.

TREATMENT.—The treatment in these cases consists in the thorough removal of all diseased tissue, and that means the removal of the entire gland. Before describing the operation to which I desire to call your attention I will mention the use of some of the most frequently used methods of removal of the tonsil.

TONSILLOTOME.—In the form of tonsillar hypertrophy, described above, where the gland does not project beyond the pillars of the fauces and where there are adhesions to the anterior and posterior pillars, where we have the long, flat, and sunken tonsil, or where there are lobules of hypertrophied tissue, and where the diseased tissue extends to the base of the tonsil, it will be readily seen that it is extremely difficult to include all of the diseased tissue within the blades of the guillotine, and that the tonsillotome is an unsatisfactory instrument for its removal. As a matter of fact the use of the tonsillotome, in any form of tonsillar hypertrophy, is unsatisfactory, for a portion of the gland remains after operation, which is subject to a chronic inflammation, and at some future time is exceedingly liable to give rise to trouble and to present that form of hypertrophy described above, that is, the submerged tonsil.

COLD-WIRE SNARE.—The cold-wire snare is an exceedingly valuable instrument for the removal of some forms of tonsillar hypertrophy, especially in children, when operating under an anesthetic; and in these cases the gland should first be thoroughly separated from the pillars of the fauces and from its attachments above and below, in order that the tonsil may be drawn well out with the forceps, and the wire slipped well down to the base of the gland. The snare is also a valuable means of operating in cases of adults when the gland is hypertrophied so that it extends beyond the pillars, and is firm and regular in outline so the loop of the snare can be slipped down to the base and include all the tonsillar tissue; but in the form of submerged tonsil described, where we have the long, flat, sunken tonsil, or where there are multiple lobes of hypertrophied tissue, the use of the snare is not always successful.

TONSIL SCISSORS.—The method which has proven very satisfactory in this form of diseased tonsil is to dissect out the gland, using for this purpose the Robertson tonsil scissors.

The tonsil and surrounding parts are cleansed in the usual manner, and a ten per cent solution of cocain is applied by means of an applicator; then an application of adrenalin and after an interval of about five minutes a second application of cocain is made.

The Robertson scissors are made in right and left for the removal of the right and left tonsil respectively; the blades of the scissors are at right angles to the handle, and are also curved on the flat in such a way that the blades fit into the tonsillar fossa. It will be found preferable to use both pairs of scissors in removing each tonsil, cutting from above downward with one pair, and from below upward with the second pair. The patient after a few minutes instruction is able to use the tongue depressor successfully; the tonsil is then grasped with the tonsil forceps and drawn well inward toward the median line, and all adhesions between the tonsillar tissue and the anterior and posterior pillars are completely severed by means of a right-angled tonsil knife, or a pair of scissors curved on the flat. The upper portion of the tonsil is then drawn out and dissected out in its upper half by means of the tonsil scissors, cutting from above downward; the lower portion of the gland is then seized with the forceps, and the lower half of the tonsil dissected from below upwards with the second pair of scissors. Should any shreds of tissue remain they can be easily removed with the scissors and forceps. After the removal of the gland the anterior and posterior pillars will drop into their normal position.

The after-treatment consists in cleansing the wound gently, and making an application of tinct. benzoin comp., which, after the evaporation of the alcohol, leaves the wound covered with a resinous film which is insoluble in water, and hastens the healing process, and makes it less painful in swallowing.

As the majority of the cases occur among adults the operation may be performed under cocain anesthesia, and as the operation can be made practically painless by the use of a ten per cent solution of cocain, and practically bloodless by the use of a solution of adrenalin, the operator is enabled to remove thoroughly all diseased tissue. In case it is advisable or necessary to use a general anesthetic, adrenalin may be applied locally, with the patient's head drawn well down over the end of the table, in order that the blood and saliva may drain away from the tonsil and larynx, and leave the field of operation clear.

The subject of hemorrhage should always be borne in mind in removing a tonsil in an adult, but I believe that the use of the tonsillotome subjects the patient to more danger from bleeding than the use of either the cold-wire snare or the tonsil scissors. In sectioning a fibrous tonsil with the guillotine the open blood vessels are surrounded by firm fibrous tissue, which allows of but little contractility of the vessel walls; whereas the soft areolar tissue, which is of considerable thickness and in which the tonsil is imbedded, allows the severed vessels to contract, thus lessening the danger of troublesome bleeding.

A NOTED MAN

Dr. Douglas Argyll Robertson, it is reported, is about to retire from active duties at Edinburgh, and take up residence at St. Aubins, Jersey. Dr. Robertson's name is familiar to the profession as descriptive of the "Argyll Robertson" pupil, since the publication of his paper on "Four Cases of Spinal Myosis, with Remarks on the Action of Light on the Pupil."

For about 30 years he served as ophthalmic surgeon to the Edinburgh Royal Infirmary. He has served as president of the Ophthalmological Society of the United Kingdom, and as president (1894) of the International Ophthalogical Congress which met at Edinburgh, and is now honorary surgeon-oculist to the king.

THE HOSPITAL BULLETIN

ST. BARNABAS HOSPITAL

MINNEAPOLIS

THE REMOVAL OF THREE FEET OF SMALL INTESTINES FOR THE RELIEF OF UNUSUAL FORMATION OF ADHESIONS

In the Service of Dr. G. G. Eitel

Mr. H—— first entered the hospital Nov. 7, 1903. Age, 36; weight, 110 lb.; occupation, bookkeeper. He complained of pain in the region of McBurney's point.

Family History.—Negative.

Past History.—Sunstroke nine years ago. Otherwise he has always been well until the spring of 1897, when he had his first severe attack of pain, accompanied by the classical symptoms of appendicitis. In Nov., 1898, after several similar attacks the appendix was removed. For the following three years he suffered considerable pain in the same region, and at the end of that time, in Oct., 1901, another operation was performed. Adhesions were found surrounding the seat of operation and these were broken down. Shortly after the operation the pain started in again, and has persisted almost constantly until the present time.

One year ago he had typhoid fever, after which the pain was somewhat relieved for a few weeks. There has been no tendency to constipation. He has never had any digestive disturbances nor any intestinal disorders whatever.

Physical Examination.—The patient is a thin, slight man of a remarkably wiry build. There is no distention of the abdomen, no tympanites, and no resistance. There is considerable tenderness upon pressure, confined chiefly to the region right of the rectus muscle.

Operation.—Performed Nov. 7. Numerous adhesions were found about cecum and surrounding the adjacent bowel attaching it to the parietal peritoneum. All adhesions were carefully broken down; the cut surfaces were covered with peritoneum, and the abdomen closed. The pain was relieved, and the patient seemed to be making an excellent recovery, but had not yet left the hospital when, on Nov. 23d, he was suddenly seized with the symptoms of complete obstruction of the bowel. An operation was performed at once, and a band found tightly constricting the ileum, a short distance from the cecum. The band was released, and the patient's further recovery was uneventful. However, shortly after having left the hospital the pain began again, and continued with increasing severity until March 10th, when another operation was performed. At this time the cecum and the adjacent bowel for at least three feet were found firmly matted together, and bound to the parietal wall. The only hope for a satisfactory result seemed to be in the removal of this portion of the intestines. Somewhat over three feet of ileum was therefore removed, a Murphy button being used for the anastomosis.

The patient recovered with marvelous rapidity. Five hours after the operation he sat up, and from that time until his dismissal from the hospital he was unwilling to remain in bed. On the fifth day he was walking about. The button was passed on the ninth day, after which he returned home. He has had no pain whatever since, and is in excellent health at the present time.

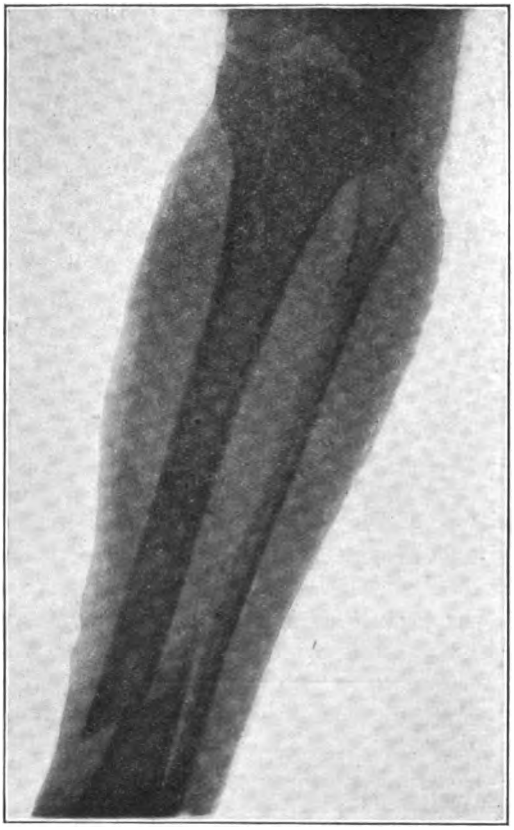
FRACTURE OF BOTH BONES OF THE RIGHT LEG

In the Service of Dr. W. E. Rochford

Mr. C—— entered the hospital Jan. 2, 1904, and was discharged the middle of February.

The patient, a business man, aged 40, in good health, slipped on an icy sidewalk, producing a simple oblique fracture of both bones of right leg. The skiagraph shows this fracture beautifully. Fracture of both bones is more common than fracture of either bone singly and the fracture more frequent in lower third of leg. Indirect violence is more often the cause of fracture of lower third. Malgaine's analyses of 67 cases confirms this, though Hamilton states that direct force is the more common cause of all fractures of leg. The fibula is usually fractured on a higher level. Observe in this case the extreme distance between the fractured tibia and the fibula—a quite uncommon occurrence.

I was unable to determine where the fibula was fractured until an *x*-ray was taken, as the patient did not complain of any special soreness or tenderness at point of fracture in the fibula, though two weeks after the accident, he felt severe pain in this region if, in changing the dressing, the leg was twisted in the least.



Sklagraph taken by Dr. W. P. Spring, St. Barnabas Hospital.

This fracture is oblique, as is the rule in all fractures due to indirect violence. There was a slight tendency to outward rotation. The nearer a fracture is to the ankle the more difficult it is to hold it in proper place.

The case was a simple fracture, but required careful management to prevent a break in the skin, as the sharp end of the upper fragment projected almost through the skin. A plaster-of-Paris cast was applied a few days after the accident, and changed as the swelling subsided. There is no dressing more satisfactory for treating fracture of the leg than plaster of Paris properly used.

This case was slow to recover. At the end of six weeks there was only fibrous union in the tibia, and the patient was up and around on crutches with a lighter cast.

April 11th, union is stronger, but very little callus formation can be felt. Patient goes about on crutches, bears some weight on injured leg, and goes to office work every day. Foot, leg, and thigh are edematous. He complains of pain at night, which awakens him from sleep. Says he feels pain in the bone, and rests easier when lying on his back. Measurements of the injured calf and patella are, 1 inch more around calf and 1½ inches more around patella than in the uninjured leg. Cast has been removed, and leg is given massage and hot baths every day. There is little or no shortening, and slight outward rotation. Expect a good recovery, though it will be slow.

Points which make this case of interest:

1. The importance of an *x*-ray examination in diagnosing fractures and the character of the same.
2. The great distance between the fracture of the tibia and the fibula.
3. The slow recovery under most favorable hospital advantages for treatment.

A CASE OF APOPLEXY IN A YOUNG MAN

In the Service of Dr. C. H. Hunter

REPORTED BY DR. C. E. GRAY, INTERNE

This case is given not for any peculiarity, but as one of typical symptomatology. The rareness of these cases may make it interesting.

Mr. W. M—— was sent to St. Barnabas Hospital March 15, 1904, at 7 p. m. Patient was 26 yrs. of age, married, about 5 ft. 9 in. in height, and weighed about 140 lb.

His past history was uneventful, except for some malaise which he called grip, and which lasted for two weeks preceding his present illness. No physician was called. No history of syphilis was obtainable.

The patient was lying on his bed at home at 4 p. m., when his wife left the room for about ten minutes, and upon returning found him lying on the floor groaning and crying, "Oh, my head," and holding his head tightly with his hands. He rapidly fell into stupor and then coma, the muscles becoming completely flaccid. He vomited some, and the breathing ceased, but was restored by artificial means.

His condition on entering the hospital was as follows: He was in deep coma; the pupils were evenly contracted almost to a pin-head size; sensation was entirely lacking; the knee was sharply flexed, and ankle clonus was present; the heart was beating rapidly, forcibly, and irregularly against the chest-wall; the pulse was full and strong, and its rate 60; the heart sounds were normal; the respirations were deep and noisy; the lungs and the abdominal organs were normal; the bladder was distended, causing him to press with his hands the lower abdomen as though it pained him; he was catherterized, and 24 oz. of urine removed, which proved upon examination to be negative. No bruises were found; there was no unusual odor to the breath.

An ice-cap was put to his head. His condition grew rapidly worse. At 9 p. m. his pulse was irregular and full, with a rate of 90. At 10 p. m. the respirations were Cheyne-Stokes in character; the pulse was 140. At 10:30 the right pupil was dilated, and the left contracted; the reflex was lost; the muscles flaccid; and the pulse could not be counted. A hypodermic injection of digitalin, gr. 1-100, was given. At 10:45 strychnin, gr. 1-30, and atropin, gr. 1-100, were injected. He died at 11 p. m.

POST-MORTEM FINDINGS

S. MARX WHITE, M. D., PATHOLOGIST

AUTOPSY DIAGNOSIS.—1. Intraventricular hemorrhage in brain. 2. Atheroma coronary and cerebral arteries. 3. Slight hypertrophy of heart. 4. Beginning broncho-pneumonia.

HEART.—Somewhat enlarged; right auricle distended with blood; left ventricle in systole; valves, negative; papillary muscles, hypertrophied.

AORTA.—Smooth; no atheroma.

CORONARY ARTERIES.—Two large atheromatous patches at about one inch from where given off from aorta; small atheromatous patch in beginning of posterior branch.

SCALP AND SKULL.—Careful search fails to reveal any abnormality or evidence of injury.

MEMBRANES OF BRAIN.—On opening the cranial cavity considerable blood-stained fluid escapes from dura; basilar artery and vessels of circle of Willis show small patches of atheroma.

BRAIN.—Vessels are over convexity injected; veins quite widely distended; fluid in pia increased in amount, but not abnormally cloudy; matted blood found beneath pia surrounding medulla, and over medium portions of under surface of cerebellum. On opening lateral ventricles they are found distended with blood which also fills third ventricle, aqueduct of Sylvius, and fourth ventricle, escaping through roof of latter to subpial tissues, as already described. No area of softening or tearing of brain-tissue can be found. Blood simply fills ventricles, and there is no evidence to show in which hemorrhage originated.

Other organs are normal, with no other signs of atheroma.

ST. MARY'S HOSPITAL

MINNEAPOLIS

TYPHOID PERFORATION
CHRONIC GASTRIC ULCER

IN THE SERVICE OF DR. JAMES H. DUNN

TYPHOID PERFORATION

Rev. J. D——, aged 46, entered hospital February 18th, in a very profound attack of typhoid. The patient had been a very strong, active, and hard-working clergyman, never before sick. For the past two months had been overworked and run down, but had kept hard at his duties till the day before admission. Temperature, 104°; pulse, 135, very irregular, and of poor quality; Widal and Diazo reactions; urine contained albumen and granular casts; catheter required February 19, and continuously thereafter, for retention; rose spots. Evidently, patient was well on in second week of attack before quitting work. During the first week in the hospital the cardiac and renal symptoms were most threatening.

Feb. 26th, alarming hemorrhages from the bowels, continuing off and on for two days. At one time death was thought imminent. After this the patient rallied, heart and kidneys acted better, and all seemed more favorable for five days, until March 3d, when at 8 p. m. the temperature was 102°, and the pulse 103, about as they had ranged since Feb. 26th. At 8:45 p. m. the patient complained of pain in the region of the bladder, and desire to urinate. Dr. R. E. Farr at once suspected perforation. A blood-count by Dr. Chowning, at 12 p. m., showed leucocytosis 18,000. An increasing rigidity of the abdominal muscles, and diminution of liver dullness, rendered the diagnosis of perforation certain. The pulse and temperature were practically unchanged by the perforation. At 3 a. m., six and three-fourth hours after the first evidences of pain, Drs. Dunn and Farr operated, a small quantity of chloroform being given to quiet the restless and delirious patient with a very rigid abdomen. On opening the abdomen extensive peritonitis was apparent, the small intestines everywhere injected, many loops slightly glued together and covered with lymph. On bringing up the ileocecal portion of the gut, a round perforation the size of a pea was found two centimeters from the ileocecal junction. For more than half an inch around the opening the intestinal wall was thickened and infiltrated, and it was with the greatest difficulty that the opening was closed on account of the cutting out of the silk sutures, the condition of the patient not warranting a resection of the bowel, especially at this difficult spot. It was finally closed and covered with an omental graft, to reinforce it. The ileum held up to the light showed many other large ulcers, one or two of which being nearly through were readily folded in with a purse-string suture. The abdomen was carefully washed out with salt solution and closed. Time, twenty-five minutes. The patient was returned to bed in good condition, and improved slightly for the next twenty-four hours, then evidences of peritonitis became more marked, and the patient gradually failed, dying 51 hours after the operation.

The chief points of interest were:

First, the diagnosis, based upon pain and leucocytosis, but particularly on abdominal rigidity. There was no shock or fall of temperature, and the pain referred to the bladder by a partially delirious patient, who had been catheterized for many days, was not in itself very assuring, until confirmed by the leucocyte count and the abdominal rigidity.

Second, the operative conditions about the perforation rendering suture exceedingly difficult, more than half the circumference of the bowel being thick and infiltrated, and scarcely competent to hold a suture. The sewing over this patch of an omental graft, and the finding of conditions which indicated that the perforation had evidently been of a subacute character, i. e., the spot had evidently been protected by an over-laying of the cecum so that no gross exit of feces had occurred, but an insidious peritoneal infection had been going on for probably several hours. When the peritonitis was well under way, pain and rigidity and leucocytosis discovered the condition.

The desperate condition of the patient, aside from the perforation and the extent of the peritonitis at the time of the operation, sufficiently explains the failure of the operation to save his life.

CHRONIC GASTRIC ULCER

Mrs. R——, aged 44; mother of 13 children. Sixteen years ago she had attacks of pain, with gas and vomiting after meals, for a month, and ever since has had more or less distress, bloating, and vomiting after meals. Her stomach was nearly always sore, and she claims to have taken great quantities of bicarbonate of soda, "a pound a week" for years. In April, 1902, she was confined of twins, and from that time until October, 1902, she grew rapidly worse; finally for ten weeks she thinks she vomited everything taken into her stomach. In April, 1903, she was explored by surgeons in another city, who pronounced her disease cancer of the stomach, past relief, and closed the abdomen. However, since this exploratory laparotomy she had improved a little, and gained five pounds in weight. Nov. 1, examination by Dr. Dunn showed a greatly emaciated and feeble woman, with a distinct tumor the size of an egg in the pyloric region, hyperchlorhydria and decided gastric dilatation. He assured the rather skeptical patient that the tumor was probably not malignant, but chronic gastric ulcer, and that gastro-enterostomy should be performed. Nov. 4th the abdomen was opened, a mass larger than a hen's egg occupied the pyloric end of the stomach, which showed all the characteristics of certain chronic ulcers of stomach, and no evidences of malignancy.

A gastro-enterostomy, posterior, in this case, with the button on account of the very exhausted state of the patient, was made. But a few drops of chloroform were used, and the whole operation concluded in eighteen minutes. The patient was practically undisturbed by the operation, and after the second day expressed herself as feeling better than for a long time. She made a rapid recovery, passed the button on the eleventh day, and left for her home Nov. 25th, feeling better than for ten years, with a keen appetite and ability to digest all ordinary food. She has since gained forty pounds in weight, and the tumor is disappearing.

The most interesting points in the case were:

The diagnosis, it having been pronounced cancer by several excellent practitioners, both before and after opening the abdomen, and

Second, the case is representative of the class of cases in which the most brilliant and beneficial results of stomach surgery are achieved.

CLINICAL MICROSCOPY

GRANULES IN THE RED BLOOD CELLS OF MAN

In 1898 Müller described certain granular changes in red-blood cells which he considered as coagulation phenomena. Other observers, such as Heinz, Bloch, Schwalbe, and Maximow have also observed granules in erythrocytes, and described them.

Vaughn (Journal of Medical Research, Vol. X, No. 3) publishes some extensive observations upon these granules in the red cells of man. His preparations were made from fresh blood, which was mixed with polychrome methylene-blue, and examined with oil immersion lens. He concluded:

1. That the granules seen in red-blood cells are not artifacts, but are probably portions of the nuclei of red cells which have undergone degeneration.
2. That they are found in small numbers in normal blood.
3. That they are present in greater abundance in the blood of pernicious anemia and in the blood of the new-born.
4. That from a diagnostic and prognostic point of view they have about the same significance as the nucleated red cells.

The presence of these granules in the red-blood corpuscles may precede the appearance of the nucleated red cells, and by searching for them an oncoming pernicious anemia might be detected earlier than it could be by waiting for the appearance of the nucleated erythrocytes.

BLACK URINE

From the view-point of diagnosis and prognosis it is important to know the significance of a black-colored urine. When such a urine is encountered one usually thinks of carbolic-acid poisoning, melanotic sarcoma or alkaptonuria.

Garrod (The Practitioner, March, 1904) deals very exhaustively with the subject, and gives a list of conditions in which the urine is black when passed, or changes to black upon standing in the light. A black-colored urine may be encountered in long-standing cases of deep jaundice in which the skin takes on a dirty-green color, also in some cases of hematuria and hemoglobinuria, the black color here being due to blood or hemoglobin. The port-wine color of the urine seen in hematoporphyrinuria the author thinks is due largely to the presence of abnormal pigment rather than to hematoporphyrin alone. Most of the instances of this condition recently reported are cases of poisoning from too large doses of sulphonal.

In melanotic sarcoma, especially where the internal organs are involved, the color of the urine is normal when passed, but changes to brown and then to inky black on standing. Urines rich in indican are not infrequently mistaken for this condition.

Alkaptonuria is another disease in which the urine is normal in color when passed, and changes to black upon standing in the light. Care must be taken not to confuse alkaptonuria with diabetes mellitus, since the former gives the sugar-reaction upon testing with Fehling's solution.

Sometimes the urine of patients with ochronosis (a disease in which the cartilages become black) changes to inky black upon standing in the light. Three such cases have been reported. The author dicusses also the black urines caused by certain diet and drugs.

Carbolic acid, creosote, naphthalin, salol, thallin, and also rhubarb and senna can produce a black-colored urine when taken in too large amounts.

Other cases reported in the literature where the patients have passed black urines which are too obscure to be classified, are referred to by the writer.

George Douglas Head, M. D.

NORTHWESTERN LANCET
A SEMIMONTHLY MEDICAL JOURNAL
The Official Organ of the Hennepin County Medical Society
W. A. JONES, M. D. .... EDITOR
Editorial Office, 515 Pillsbury Building
W. L. KLEIN, PUBLISHER
SUBSCRIPTION, $2.00 A YEAR.
839-840 Lumber Exchange .... Minneapolis
MAY 1, 1904

HYPODERMATIC MEDICATION

The injection of drugs under the skin is a favorite method of treatment in most countries, but is not so extensively employed, nor does it embrace so large a variety of medicines elsewhere, as in Italy, according to a therapeutic memorandum in the Cincinnati Lancet-Clinic by Dr. Chas. A. L. Reed. Morphia, atropia, strychnia, digitalis, nitroglycerin, hyoscin, and mercury are commonly employed on account of the solubility and the rapidity with which they enter into the circulation. For several years the Italians have injected iron, arsenic, and metallic iodin and its salts, in addition to the drugs used in this country. Combinations of iron, arsenic, and strychnia are injected with the same freedom that strychnia is used in this country. The results of such injections are much more definite and satisfactory than if taken by the usual route.

These hypodermatic preparations, whether simple or compound, are put up in the form of solutions, carefully sterilized in glass tubes blown shut, each tube containing a single dose, one cubic centimeter. The green citrate of iron, in doses varying from 0.03 to 0.10, repeated one, two, or three times a day, or the green citro-ammoniated arseniate in doses of 0.01 to 0.10 is used in chlorosis, anemia, or as a hematopoietic and general reconstructive. Arseniated citromanganate, the phosphoglycerate, and pyrophosphate are similarly administered. Various other preparations in which iron and sparteine are combined, are used as cardiovascular tonics. Metallic iodin, held in solution by the potassium iodid, is extensively employed as an antisyphilitic. Iodoform in tuberculous affections and mercurials in syphilis are so universally used that no laudatory comment is needed to urge their continuance.

It is now practically useless to dispute the fact that iron is absorbed and is unquestionably curative in chlorosis. The channels through which absorption takes place vary with the manner and form of administration: If given by the mouth the process of absorption is slow; if injected under the skin the results are far more rapid in their appearance. Fortunately, iron is not particularly irritating to tissues, and may be given hypodermatically with every assurance of success, if the citrate or peptonate forms are employed. The citrate is readily soluble and may be given in a 5 per cent solution or 1 to 2 grains. The pyrophosphate is readily soluble by the addition of sodium citrate, and the dose is the same as the green citrate.

These drugs are worthy of more extended hypodermatic employment. With the present day blood observations, many interesting experiments may be recorded to establish the value of iron, arsenic, and other metals.

THE DISCOVERER OF ANESTHESIA

Simultaneously with the appearance of a paper written by Dr. W. T. G. Morton in 1865 and for the first time published in abstract in the Journal of the A. M. A., comes the announcement of the death of Dr. Morton's widow, in New York, on April 21, 1904.

The man who discovered and applied sulphuric ether in anethesia has long since died, but his discovery will keep the name of Dr. Morton before the world for all time. No recognition of any sort from the government was ever granted Dr. Morton or his impoverished widow. Six congressional committees during Dr. Morton's life-time recommended an appropriation of several hundred thousand dollars to be made in compensation for the government's use of ether anesthesia during the Civil War, but for reasons best known to congress the bills were suspended in transit. General Grant recognized the value of Dr. Morton's efforts, and promptly placed at his disposal ambulance, tent, mess, and servant while the doctor was in the service. The old saying is true, that while a man is sick he will promise anything, but when he recovers nothing but promises remain. During the war the enthusiasm over the banishment of pain in surgery under ether, subsided into the commonplace acceptance of what was supposed to be public property. It was so intended, as nearly all medical discoveries are immediately placed in the hands of physicians for general use. There is less concealment of medical and surgical aids than in any other line of discoveries. Instruments destined to be used by surgeons are illustrated in the medical press, and all surgeons are privileged to manufacture as many as they please without fear of infringement of patent.

Drugs are described, their composition and formulæ published, and the clinical facts relating to their uses noted. The exception is rare, and is then due to the commercial instinct which overshadows the real professional attitude.

How many medical men have received honorable distinction from the government? What medical man will be represented in the hall of fame? Probably some one who invented a secret nostrum for the cure of an hysterical disorder. Doctors as a rule are too modest in asking favors for themselves or others. They openly and freely give opinions and advice for the good of the public, without hope of reward or recognition. The people accept such favors with little, if any, ceremony, and then criticize the physician who seeks to regulate or reduce the ravages of disease. When a man becomes a physician for the love of the work or his interest in science, he subordinates himself to the public; and there he stays unless he is dragged up by popular approval or genuine merit. Such histories are frequently repeated and cause but little comment among physicians. The majority of the physicians are contented if allowed to practice unmolested by public approval or demands that distract attention from the real work. A few seek public attention and attempt to keep in constant view, but the usual result is unexpected retirement. On the whole it is more satisfactory to do one's work in the most skilled manner without undue expectations; disappointments are sure to follow if the worker is constantly on the watch for recognition from the ultra public or political classes.

Dr. Morton's name will be mentioned to physicians who will be born centuries hence, and anesthesia will continue to bless and aid the suffering, even though no money was offered Dr. Morton for his most valuable discovery. The Germans appreciate and compensate discoverers.

THE PASSING OF THE TONSILLOTOME

The conviction, which has been for some time prevalent in the minds of leading laryngologists, that the tonsil, whenever it is of sufficient size to be apparent upon inspection of the throat, is a structure that is the product of disease, and not a normal portion of the anatomy, as was formerly taught, is evidently becoming more general in the minds at least of those who make a special study of throat diseases. This was manifest in the discussion which followed the reading of Dr. Murray's paper, which is published in this issue of THE LANCET, for not a single laryngologist disputed the principles which form the foundation of the paper.

Though the laryngologist readily receives this knowledge, and believes, as a result of his clinical experience, this idea to be correct, to the lay mind, and even to many physicians, such ideas seem radical, and they receive with reluctance the advice to have such diseased tonsils removed entirely, fearing the effect upon the voice and upon the general health, even thinking that there is some relation between the tonsil and sex. This is, doubtless, largely due to the fact that this lymphoid tissue between the pillars of the fauces has a name, just as every real organ, such as the liver and kidney, has a name, and to the fact that hypertrophied tonsils are so prevalent that they are looked upon as normal structures, and even in the books published as recently as ten years ago the structure of a diseased tonsil is described as if it were a normal structure. The following "histological" description of the tonsil is quoted from a standard work published at that time: "The crypts of largest size and greatest depth are filled more or less with a substance composed of fat molecules, loosened pavement epithelium, lymph corpuscles, small molecular granules, and cholestrin crystals." Thus the putrefying mass contained in these crypts is described as if it were normal.

The so-called crypts have been produced as a result of hypertrophic inflammation of the lymphatic tissue between the pillars of the fauces, and portions of this lymphatic tissue, having become partially adherent as a consequence of plastic inflammation, cause the formation of blind pockets which invite the entrance of food, and retain it where it is converted into masses of corruption. When such a lymphatic gland becomes so diseased the proper treatment is to remove it entirely, as would be practiced when a lymphatic gland necessitating operation becomes chronically diseased in any other portion of the body. The only treatment that is curative is the complete extirpation of such diseased tonsils.

One of the things which has had more to do with blocking the progress of surgery of this part was the invention of the ingenious instrument called the tonsillotome. All tonsillotomes, of which there are many patterns, are made upon the same principle, the object of the inventors being to devise an instrument that would cut off the tonsil in the quickest time possible, and we have been taught that when the tonsil was cut off the remainder would atrophy, which is a very comfortable consolation for the operator to nourish when his conscience troubles him with the knowledge that he has done an incomplete operation. This teaching has some basis in the fact that the tonsil does often appear to become shrunken after it has been thus clipped off, but this apparent shrinkage is due to the fact that adhesive inflammation takes place, causing the tonsillar tissue to become firmly attached to the pillars of the fauces, the tonsil being so bound down that it is not very conspicuous. It is, nevertheless, a harbinger of disease, and a constant menace to the patient's health. Following a tonsillotomy too, oftentimes sufficient tissue is removed to rid the patient of the crypts, and he experiences some relief; on the other hand there are a vast number of cases where tonsillotomy does not give relief, and frequently recurrence of the hypertrophied process is established. The only rational procedure to be practiced upon this glandular tissue when it is diseased, is to remove the entire tissue, whether it be by the use of the snare or scissors. This is an operation which cannot be done by one inexperienced, as can the old operation of tonsillotomy, for it requires a careful dissection of the entire structure. The operator will find, however, that he can become very expert in its performance, and will be glad to discard his tonsillotomes.

FRANK C. TODD.

BOOK NOTICES

THE PRACTICAL MEDICINE SERIES OF YEAR BOOKS. Comprising ten volumes on the year's progress in Medicine and Surgery, issued monthly. Under the general editorial charge of Gustavus P. Head, M. D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. VOLUME II. General Surgery, edited by John B. Murphy, M. D., Professor of Surgery, North Western University Medical School. Price, $1.50. Chicago: The Year Book Publishers.

This little volume contains in a nutshell the surgical progress of the past year. The tiresome and unsatisfactory method of giving a brief outline of all the articles which could be found in medical journals has been avoided, and the plan of reproducing articles *in extenso* has been adopted. Marked attention is paid to the surgery of the stomach, the thorax, and the prostate, bringing the literature on these points up to date.

The fourteen pages which show the possibilities and limitations of *x*-ray, radiography, and cataphoresis are well worth the price of the volume. The book will be found especially valuable to the busy practitioner. A very commendable feature of this series of year books enables those interested in special subjects to buy only the parts they desire.

THE PRACTICAL MEDICINE SERIES OF YEAR BOOKS. Vol. VIII, pp. 326, July, 1903. The Year Book Publishers, Chicago.

This volume is one in a series of ten, edited to cover the "entire field of medicine and surgery." The contents of the book are divided into chapters on Therapeutics, by George F. Butler; Preventive Medicine, by Henry B. Fovill; Climatology, by Norman Bridge; Forensic Medicine, by Harold N. Moyer; Suggestive Therapeutics, by Daniel R. Bower. The more recent additions to these subjects are given, together with references.

THE MEDICAL EPITOME SERIES. Organic and Physiologic Chemistry. By McGloman. Lea Bros. & Co.

This little volume of 246 pages covers the ground sufficiently for the student. The practitioner who wishes to know something of the chemistry of the large number of medicines derived from organic compounds, will find this book useful. Perhaps the chapter on Physiologic Chemistry will prove of more interest to the practitioner. The chemistry of the body constituents, urine, digestive metabolism, etc., are entered upon fully enough. Numerous tests and reagents are given. Altogether the arrangement is good, and clearness is not sacrificed because of brevity.

MISCELLANY

PROGRAM OF THE STATE MEDICAL ASSOCIATION

THIRTY-SIXTH ANNUAL MEETING OF THE MINNESOTA STATE MEDICAL ASSOCIATION

At Elks' Hall,
Cor. 6th and Hennepin Ave.,
Minneapolis.

House of Delegates Meets at 2 P. M., Wednesday, June 1.

Thursday, June 2d, 9 A. M.

1 Address of Welcome.
BY THE MAYOR OF MINNEAPOLIS.
President's Address.

2 A Demonstration of the Anatomical Method of Treating Fracture of the Neck of the Femur by which Bony Union can be secured in a large majority of cases.
DR. JAS. E. MOORE, MINNEAPOLIS.

3 Notes on the Management of Fractures of the Lower Extremity with Hodges Splint, with Report of Cases.
DR. W. T. ADAMS, ELGIN.
Discussion on the two papers.

4 Pneumonia. A Short Review of the Treatment for the Last Fifty Years.
DR. A. F. CONLEY, CANNON FALLS.

5 Pneumonia, Problems in Treatment.
DR. J. B. McGAUGHEY, WINONA.
Discussion on the two papers.

6 Prostatectomy, and its Results.
DR. A. MAC LAREN, ST. PAUL.

7 Observations drawn from 11,000 Anethesias.
MISS ALICE MAGRAW, ROCHESTER.

8 Non Diphtheritic Membranous Anginas.
DR. LOUIS B. WILSON, MINNEAPOLIS.

9 Acute Infections of the Knee Joint.
DR. J. A. GOODRICH, ST. PAUL.

10 Surgical Treatment of Epithelioma of the Lip.
DR. J. C. STEWART, MINNEAPOLIS.

Thursday, June 2d, 1:30 P. M.

1 Oration on Surgery.
DR. ALEX HUGH FERGUSON, CHICAGO.

2 The Effect of the Operation for Uterine Displacement upon Subsequent Pregnancies.
DR. H. P. RITCHIE, ST. PAUL.

3 Symposium on Myocarditis.
  a Etiology and Pathology of Chronic Myocarditis.
  DR. MARY S. WHITE, MINNEAPOLIS.
  b Diagnosis of Myocarditis.
  DR. SOREN P. REES, MINNEAPOLIS.
  c Prognosis and Treatment of Myocarditis.
  DR. J. W. BELL, MINNEAPOLIS.

4 Extirpation of the Lachrymal Sac.
DR. FRANK C. TODD, MINNEAPOLIS.

5 Report of Case of Necrosis of Soft Parts from use of Adrenaline.
DR. F. A. DUNSMOOR, MINNEAPOLIS.

7 Symposium of Gastric Ulcer.
Etiology and Pathology of Gastric Ulcer.
DR. W. B. SHELDEN, MINNEAPOLIS.
  a Gastric Ulcer—Symptoms and Treatment.
  DR. CHAS. H. NOOTNAGLE, MINNEAPOLIS.
  b Diagnosis of Duodenal Ulcer.
  DR. CHRISTOPHER GRAHAM, ROCHESTER.
  c The Etiological Relationship between Cancer and Ulcer of Stomach.
  DR. GEO. D. HEAD, MINNEAPOLIS.

Discussion.

9 Some Ideas as to the Nature and Treatment of Syphilis.
DR. FRANK B. WRIGHT, MINNEAPOLIS.

10 Antepartum Examination of the Pregnant Woman.
DR. FREDERICK LEAVITT, ST. PAUL.

11 Stricture of the Oesophagus.
DR. JAS. H. DUNN, MINNEAPOLIS.

13 Surgery in General Practice.
DR. W. A. GERRISH, ENDERLIN, N. D.

Thursdary Evening, June 2d, 8 P. M.

By Invitation.

1 Bovine Tuberculosis and its Relation to Human Tuberculosis.
DR. S. H. WARD.

2 Tuberculosis a Preventable Disease.
DR. J. FRANK CORBETT, MINNEAPOLIS.

3 Renal Traumata from Blunt Force. Caset.
DR. WALTER COURTNEY, BRAINERD.

4 The Modern Teaching of Materia Medica and Therapeutics.
DR. R. O. BEARD, MINNEAPOLIS.

5 Diagnosis of Kidney Stones.
DR. HENRY PLUMMER, ROCHESTER.

6 Naso-Suppuration from a practical standpoint.
DR. E. H. PARKER, MINNEAPOLIS.

7 Modern Methods of Advancement of the Recti Muscles.
DR. JOHN F. FULTON, ST. PAUL.

Friday, June 3d, 9 A. M.

1 The Heart in Acute Infections.
DR. J. GROSVENOR CROSS, MINNEAPOLIS.

2 Occipital Meningocele, with report of a case operated upon.
DR. A. E. BENJAMIN, MINNEAPOLIS.

3 Obscure Fevers in Children.
DR. W. R. RAMSEY, ST. PAUL.

4 MAMMARY TUMORS.
DR. A. R. COLVIN, ST. PAUL.

5 The Fluoroscopic Determination of Cardiac Outlines in Relation to Diagnosis.
DR. CHAS. LYMAN GREENE, ST. PAUL.

6 The Recognition of Tuberculosis as a Contagious Disease.
DR. LESTER W. DAY, MINNEAPOLIS.

7 The Indication for Operation on Enlarged Cervical Glands.
DR. W. A. DENNIS, ST. PAUL.

8 Pregnancy following Ventro-Suspension.
DR. J. O. LITZENBERG, MINNEAPOLIS

9 The Inebriate as a Medical and Social Problem.
DR. A. W. DUNNING, ST. PAUL.

10 The Democracy of Education in Medicine. A Plea for Broadness in Policies.
DR. GEO. C. WELLNER, RED WING.

Friday, June 3d, 2. P. M.

By Invitation.

1 Congenital Dislocation of the Hip.
DR. EDWARD OCHNER, CHICAGO.

2 The Practical Value of the Study of Embryology to the Physician.
DR. THOS. J. LEE, MINNEAPOLIS.

3 Gangrene of the Throat.
DR. J. A. WATSON, MINNEAPOLIS.

4 Cause and Treatment of Articular Rheumatism.
DR. E. A. HENSEL, ALEXANDRIA.

5 Varicose Veins and their Treatment.
DR. C. H. MAYO, ROCHESTER.

6 Culinary Hygiene.
DR. MARY McCOY, DULUTH.

7 Scientific Methods in Medical Education.
DR. R. O. BEARD, MINNEAPOLIS.

8 A Study of Electrical Injuries.
DR. H. L. STAPLES, MINNEAPOLIS.

9 Decapsulation of the Ovaries for the Relief of Dysmenorrhea.
DR. G. G. EITEL, MINNEAPOLIS.

10 The Abuse of Drugs.
DR. C. R. CHRISTENSON, STARBUCK.

Friday Evening, June 3d, 8 P. M.

Social Entertainment at Elks' Hall.
Given by the Profession of Minneapolis to the Minn. State Medical Association.

NEWS ITEMS

Dr. Edward Seguin has moved from Buckman to Pierz.

Dr. L. W. Mecstroth, of Wahpeton, N. D., has gone east for a few weeks of special study.

Dr. Bertram Dayfoot, of Denhoff, N. D., was married last month to Miss Anna Ployhas, of the same place.

Dr. T. T. Warham, Hamline, '97, who has been practicing for some time at Vernon Center will move to Minneapolis.

Dr. N. F. H. Doleman, a homeopathic physipital in that place. Dr. Biorn is a graduate of Hamline, class of '01.

Dr. L. P. Allen, of Minneapolis, died last month, at the age of 76. Dr. Allen practiced in Minneapolis over twenty years.

The contract has been let for building an addition to the Minneapolis City Hospital, which, complete, will cost about $50,000.

Dr. W. F. Hamilton, who has been practicing a few months at Lake City, has moved to Elgin, and gone into partnership with Dr. W. T. Adams.

Dr. Henry Hutchinson, of St. Paul, has been appointed president of the State Board of Health to succeed Dr. Franklin Staples, who died in February.

Dr. La Rose, of the firm of Drs. Quain and Ramstad, of Bismarck, N. D., will remove to Mandan, and his place will be taken by Dr. Boyd, of Chicago.

Contracts have been let for the new building of St. John's Hospital, of Fargo, N. D. The building, with heating and plumbing, will cost over $40,000.

Dr. R. P. Pearsall, on the staff of the Presbyterian Hospital of Chicago, has joined the staff of the Lenont Hospital of Virginia. Dr. Pearsall is a graduate of Rush.

Dr. C. M. Shanely, of Lidgerwood, N. D., who has been spending several months in the South on account of his health, has returned to his work, greatly improved.

Dr. D. B. Pritchard, of Winona, was severely injured in a runaway accident last month. One of the bones of the leg was broken, and he will be confined to the house several weeks.

The City and County Hospital of Albert Lea is going out of business for lack of support. Miss Nelson and her sister, who have been in charge of it, will return to their home in Browns Valley.

The Northern Hospital, a state institution, situated at Redfield, S. D., will be ready for occupancy the last of this month. The building has cost $50,000, and will accommodate 120 patients.

The Crow River Valley and the West Central Medical Societies held a joint meeting at Morris last month. A good attendance and excellent papers made the meeting interesting and profitable.

Dr. C. W. Kanne, of Arlington, Minn., is going to Germany to take post-graduate work in diseases of women and children, and in surgery. Dr. C. W. Wilcowske, of Minneapolis, will have charge of his work until he returns.

The Scott-Carver Medical Society was organized at Jordan last month. The following officers were elected: President, Dr. John Landenberger, of New Prague; vice-president, Dr. W. H. Phillips, of Jordan; secretary-treasurer, Dr. Schneider, of Chaska. Dr. H. W. Reiter, of Shakopee was elected delegate.

The Wright County Medical Society held its annual meeting at Buffalo last month. The following officers were elected: President, Dr. E. Y. Chilton, of Howard Lake; vice-president, Dr. R. F. Lynch, of Monticello; secretary, Dr. E. A. Shannon, of Buffalo; treasurer, Dr. M. F. Rogers, of Buffalo; delegate, Dr. E. Y. Chilton.

Drs. Grafton and Matteson, of Hayward, Wis., have opened a well-equipped hospital at that place. Dr. Matteson is a graduate of the State University, having received degrees from both the collegiate and medical departments. Miss Helen Peterson, a professional nurse, of Minneapolis, will have charge of the hospital.

At the April quarterly meeting of the North Dakota State Board of Medical Examiners, the following physicians were granted licenses to practice in North Dakota: Dr. Andrew J. Kaess, Moorhead, Minn.; Dr. John P. Schultt, Erie; Dr. P. H. Sunde, Northwood; Dr. F. P. Boyd, Bismarck; Dr. W. E. Longstreet, Kensal; Dr. George Grow, Westfield; and Dr. George Grant, Chicago, Ill.

Dr. G. C. Wellner, of Red Wing, read a paper before the Goodhue County Medical Society last month, in which he took advanced ground along certain lines. He advocated larger sanitary work on the part of the profession, more public instruction in preventive medicine, and a less intimate commercial relation between physician and druggist. The Society requested that the paper be read before the state association.

DOCTOR:—Do you wish to sell your practice? For particulars address Cramer-Krasselt Co., Milwaukee, Wis.

NORTHWESTERN LANCET

A Semimonthly Medical Journal

VOL. XXIV MAY 15, 1904 No. 10

THE TREATMENT OF THE EARLY STAGE OF PELVIC INFLAMMATION, WITH SOME POINTS IN DIAGNOSIS*

By A. W. Abbott, M. D.

Clinical Professor of Diseases of Women, University of Minnesota.

MINNEAPOLIS

It is unnecessary, and not without risk to life, to allow a woman with pelvic inflammation to lie in bed for weeks, wasting with pain and fever, while we wait for the disease to take a favorable turn, or for an abscess to develop until it bulges into the vagina, in order that it may be easily opened. So many of these cases come to the surgeon that have been thus purposely, honestly yet unwisely, temporized with, that it is important that a clearer conception of conditions and possibilities be reached. On the other hand we must learn to realize that the natural tendency ot certain pelvic infections is such that a too vigorous interference is likely to encourage rather than limit their progress. The family physician and general practitioner are far more apt to see these cases in the acute stage than the specialist. To such therefore the subject should be of peculiar interest.

The pathological histories of the various inflammations of the pelvis present so many points of difference which have an important bearing upon the treatment, that these should be first considered. Practically all pelvic infections arise from the—

Gonococcus, about	50	per cent
Tubercle-bacillus	2	"
Streptococcus and staphylococcus	40	"
Pneumococcus	2	"
Colon bacillus	3	"

The saprophytes, diphtheria, and some very rare organisms make up the balance.

The development of the lesions of the tubercle-bacillus is slow and continuous; and that of the gonococcus is usually slow and discontinuous, but in rare cases rapid. The streptococcus and staphylococcus, and also the pneumococcus, always develop rapidly. The colon bacillus generally infects secondarily an already existing abscess, exudate, or hematocele. It may primarily infect an hematocele or the urinary tract. The progress of all of the organisms mentioned, except the tubercle-bacillus and colon bacillus, is from below upward,—and that of the tubercle-bacillus is almost invariably from above downward. The invasion of the colon bacillus is usually direct from the intestines or through the circulation. The upward progress of the gonococcus is unique in one respect: on account of its rather slow and discontinuous invasions of the genital tract, it may be, and usually is, acute in one area, for instance, the tubes, while it has already become latent in another area, as the cervix.

The gonococcus is the only inflammation-producing germ, except very rarely the tubercle-bacillus, that is introduced directly by the male. It does not require an abrasion of the mucosa to enable it to produce lesions in the genital and urinary tracts and rectum, while the other organisms are non-pathogenic within these areas without some sort of traumatism. The tubercle-bacillus is non-pathogenic to the normal urethra and vagina, but is pathogenic to the bladder, endometrium and Fallopian tubes.

Girls, when infected by the gonococcus before puberty, are much more apt than after development of the genital organs, to suffer from pyemic invasion of the joints and serous cavities, and are less liable to infection of the endometrium and tubes.

---

*Read before the Hennepin County Medical Society, Minneapolis, May 2, 1904.

The peritoneum does not favor the growth of the gonococcus. Its irritative effects are seen, however, in adhesions. It seldom gives rise primarily to abscess. The tubercle-bacillus thrives well on the peritoneum, but does not tend to abscess, while the other organisms mentioned grow with frightful rapidity in this cavity, and are the cause of practically all cases of abscess and fatal peritonitis. The progress of tubercular infection in the urogenital tracts is so slow and gradual that we cannot recognize an acute stage. On the other hand the development of the other bacteria in the list, if we except the gonococcus, is so rapid, after they have once gained access to the subepithelial structures, that their whole history is acute, even to the formation of pelvic and cellular abscess, except as to what we may call their sequelæ, viz., chronic endometritis, abscess in the tubal walls, and retention of pus in the occluded tubes.

Attention should here be called to certain not very well understood bacteria, of which the proteus vulgaris is the type—the so-called saprophytes. While they have not been demonstrated to induce extensive inflammation, they certainly give rise to symptoms which may confuse the diagnosis, such as chill, high temperature, and rapid pulse. They possess, however, certain characteristics: They give rise to a putrid odor; they attack, under all ordinary conditions, necrotic tissues only; and they are easily controlled by germicidal agents.

THE SIGNIFICANCE OF BACTERIA WHEN FOUND

As the streptococcus, the staphylococcus, the pneumococcus, the colon bacillus, and a great variety of other pathogenic and non-pathogenic germs are frequently found in health in the urethra, rectum, vagina, and uterus as high as the internal os, their presence in these situations, without clinical symptoms, is of no value. The septicogenic organisms are not found in the normal uterus above the internal os; even if introduced they are non-pathogenic unless accompanied by an injury to the epithelium. When found above the internal os, with symptoms of infection, they are diagnostic as to the character of the infection. In the corporeal endometrium the infection is usually unmixed.

When the gonococcus begins to grow upon a mucous membrane all other organisms seem to disappear, and the gonococcus is found unmixed with other organisms. This is best studied in the urethra, where the other organisms seem to suddenly disappear on its first appearance, to return after its decline. When found it settles the diagnosis as to any locality in which it is found. This last observation also applies to the tubercle-bacillus, except in the very rare cases where it descends from a tubercular peritonitis through the tubes and uterus without infecting these organs.

The permanent lesions following pelvic inflammation must be considered when deciding upon what is desirable in order to get the best results in treatment. The gonococcus and tubercle-bacillus leave the Fallopian tubes and uterus in an incurable condition, and are almost invariably followed by sterility. Ablation is the only proper treatment. With the other infections, in perhaps a majority of cases, the disease stops short of destroying the function of these organs, and pregnancy frequently follows. The gonococcus and tubercle-bacillus involve both sides of the pelvis, while the other organisms frequently excite a one-sided inflammation. Hence conservative operations cannot be done for gonorrheal and tubercular disease, while release of adhesions and reparative work offer a fair prospect of restoration of function after the other pelvic infections.

As to the avenues of infection: these are in general too well understood to need repetition here, but it is still true that the danger of carrying disease by the physician's hand, not only during obstetric and minor operations, but also in the office examinations is not yet fully appreciated.

The symptoms accompanying these infections are so well known that it is only necessary to point out some of their peculiarities. The most conspicuous symptoms, chill and marked putrid odor, occur in the least dangerous infections, while in the streptococcic and staphylococcic infections, the chill is slight and odor absent. The gonococcus does not give rise to much temperature, except in poorly drained cavities, like that of the uterus and especially of the tubes. In infections by the streptococcus and staphylococcus and other pus germs, particularly the streptococcus, the rise of temperature and pulse is regular, but rapid and high with no marked intermissions. The fever of the saprophytes is marked by a sudden rise and decline with sometimes intervening periods of hours of normal temperature and pulse. This is also true in respect to the colon bacillus.

The gonococcus produces more pus on mucous membranes than any other organism. A dirty, foul-smelling, bloody discharge accompanies a saprophytic infection, while the most violent and fatal streptococcic infection is singularly wanting in discharge of any kind.

Violent irritation of the external genitalia closely simulating acute gonorrhea, but without much pus and accompanied by pruritus, may be produced by a small diplobacillus, to which I called the attention of this Society in 1894. Fortunately, as far as we know, this organism is non-pathogenic above the cervix uteri.

The natural secretion of a part affected by the tubercle-bacillus is not materially changed until ulceration begins, when it may resemble the gonorrheal discharge.

Pathogenic mixed infections in the acute stage must be borne in mind, but are not so common as generally supposed. It is especially true of the endometrium and tubal mucosa that the staphylococcus and tubercle-bacillus find a favorable nidus for growth after the vitality of the mucosa has been weakened by the gonococcus. Another peculiarity of the gonococcus is, that it leaves the tissues once invaded much more susceptible to recurrences of the same sort than do other organisms. This applies especially to the bladder, Bartholine glands, endometrium and tubes. The writer has a case under observation in which the infection of the cervix is gonorrheal, while the pus from the tube shows only the staphylococcus. This is very important as will be seen later.

Although genital tuberculosis cannot be said to have an early stage which is ever recognized, except by accident, it is given a place in this paper on account of its diagnostic bearing. Being generally secondary to tuberculosis elsewhere, particularly the peritoneum, the disease attacks more frequently and first in order the tubes, then the uterus and vagina, and lastly the vulva. When occurring in the reverse order the infection is almost invariably direct from the male. The tubercle-bacillus is inclined to nest in tissues already enfeebled by other organisms, especially the gonococcus. The period of invasion, up to the time when symptoms are manifest, is much longer than that of the gonococcus. When the disease attacks the uterus, an irritating first stage, like that of gonorrheal endometritis, is never present, but the subsequent discharge, pain, fever, and weakness are very similar, so that in both the diagnostic feature is the specific organism, to be discovered only by the cover-glass smear or Guinea-pig inoculation.

It should not be forgotten that the tubercle-bacillus may appear in the vaginal discharge, and still not be conclusive evidence of genital disease. It may be deposited in the vagina by the male, or pass through the tubes or uterus into the vagina from a tubercular peritonitis, and still there be no actual infection of the tubes or uterus. If tubercles or the bacilli are found in the curettings, or there be in addition an induration of the tubes, with fever, the diagnosis may be considered positive. Sterility, with abnormal menstruation, amenorrhea, or metrorrhagia, is a notable symptom.

Attention having been called for the purpose of diagnosis to the characteristic features of tubercular disease in the pelvis, no further allusion will be made to this form of infection, as we cannot recognize an acute stage, and hence a further discussion of this infection would not be appropriate under the title of this paper.

TREATMENT

This should be actively prophylactic as far as possible. Absolute cleanliness as to all instrumentation, child-birth, abortion, and attentions of nurses, should be automatic. I wish to emphasize the fact that in abortions before the third month the decidua should be immediately removed. Why wait for an almost certain infection, or for nature's clumsy prophylactic hemorrhage? The sterile hand or glove, especially in consecutive examinations, cannot be too strongly insisted on. Unfortunately, owing to the method of its introduction, we cannot easily protect women from the gonococcus. Salpingitis within two years, generally within a few weeks, is the almost invariable termination of a gonorrheal infection and gonorrheal salpingitis as certainly ends a woman's perfect health and her hope of bearing children. One million, or five per cent of the male population of the United States between the ages of 18 and 60 years (a very low estimate), have had gonorrhea at some period of their lives. Five hundred thousand women in the United States are morally and physically competent to communicate the disease. In view of such prevalence and destructive effects of gonorrhea, and knowing as we do that it is by no means confined to the criminal or even the so-called lower classes, what subject in the whole range of medical experience demands a more emphatic recognition? The most effective prophylactic would be the education of parents and the young of both sexes to the danger of gonorrheal infection. Knowing as you do the long period of possible infection in the male, and the doubt that it can ever be absolutely cured, how many of you would be willing that his daughter should marry a man who had ever had gonorrhea? Not one. Is the rest of humanity to suffer what you would save your own from? It is objected that women and girls should know nothing of such things. What a sickly sentiment to set up against sterility, the spoiling of a life, suffering, and early death. Is it better that the young bride of twenty should learn all about the disease by a horrible experience, or that young women of twenty should be foretold the consequences of gonorrheal infection in a plain scientific way? Another objection raised is that it would be difficult to get the evidence before marriage. Let the public know as much about gonorrhea as they are beginning to learn of tuberculosis; that pelvic inflammation a few weeks after marriage means gonorrhea, and there would be fewer pus tubes in our young married women, and I am certain that many young men would hesitate about exposing themselves to infection, indirect murder of their wives, and divorce. The trouble about the evidence is, not that it is wanting, but that it comes too late, is not recognized by the laity, and is given too little weight by the profession. The certainty that exposure would come, and that the young wife could not be deceived, would not only deter the man from incurring the risk of infection, but, if infected, would, in the majority of cases, frighten him from the assumption of the marriage relation. The silence of the profession has been too long an abettor to the murder of the innocents.

An early and positive diagnosis of the bacteriology of acute pelvic infections is always indispensable to proper treatment. The cover-slip smear gives sufficient evidence under the microscope for gonorrhea. This is often true of the other organisms taken with clinical symptoms, but cultures or inoculations are often necessary to differentiate them. The traumatisms of the termination of pregnancy, either by abortion or full term delivery, will often bring on an exacerbation of a latent gonorrhea. The microscope here is of the greatest service.

From all of the above considerations it will be seen that these different germs vary decidedly in the effects they produce in different organs, in the mode of invasion, the rapidity of development, and the condition in which they leave the tissues. Therefore the treatment may properly be based on the conditions brought about by the respective organisms, and the locus of primary infection.

THE TREATMENT OF ACUTE GONORRHEAL URETHRITIS, VULVOVAGINO-ADENITIS, VAGINITIS, ENDOCERVICITIS, AND PROCTITIS

One and all of these situations may be the points of primary infection by the gonococcus. It is just at this period of primary infection of the urethral and cervical mucosa that the greatest caution should be exercised. There can be no great harm done in treating the vagina, vulvovaginal glands, and rectum vigorously; not so with the urethra and cervical mucosa. When once the urethra or cervix uteri is invaded by the gonococcus it is impossible to tell just how far the infection may have reached. It is now a matter of experience that the disease may here become limited, and the infection, while it may not die out completely, at least becomes inactive. For these reasons careless irrigation of the bladder and dilation of the cervix and curettement, which are more than likely to irritate the parts and excite an extension beyond the invaded field, should be avoided. At this stage the cautious instillation of a 20-per-cent solution of argyrol or a weak solution of protargol is the most safe and effective procedure. For the same reasons the same treatment applies equally to the bladder and endometrium when invaded. Acute cystitis due to organisms other than the gonococcus and tubercle-bacillus may be treated in the same way. A half fluid ounce of the 10-per-cent argyrol solution will inhibit the growth of any and all organisms in the bladder. It should of course be injected into an empty bladder. Once a day is ordinarily sufficient. Rest, the free use of water, ammon. benzoate, if the urine is alkaline, cream of tartar, if acid, with opium and belladonna suppositories, if there is much tenesmus, will add to the comfort of the patient.. Curetting of the gonorrheal uterus in the acute stage is not advisable.

Fortunately the ureters and kidney pelves are rarely attacked by the gonococcus. Irrigation of the ureter or kidney pelvis will do more harm than good, and no internal germicide known has any effect in destroying the gonococcus. Copaiva and sandal-wood oil, while not germicidal, have a soothing effect on the mucosa of the upper urinary tract, and are serviceable to that extent. Rest and avoidance of irritating drinks and foods are the best that can be done, with the free use of water.

GONORRHEAL SALPINGITIS IN THE ACUTE STAGE

Fifty per cent at least of the women who have gonorrheal salpingitis have no knowledge of the fact, based on a knowledge of an infection. They know only their discomforts, and not one-fourth of these can recall the early symptoms of infection so as to fix the approximate date. Many women have the gonococcus in the urethra or cervix uteri who have not the slightest suspicion of it.

The gonorrheal invasion of the tubes, in the majority of cases, is so mild, so gradual, and attended by so slight a constitutional disturbance that there may be no recognized acute stage. In a certain number, especially after abortion or instrumentation or disturbed menstruation, the pelvic pain, tenderness, and the fever are well marked. When once the tubes are involved the disease steadily progresses until the fimbriæ are closed, the plicæ are matted together, and pressed backward into pyramidal masses, thickening of the walls begins, and the function of the tube is forever lost. This is the almost universal rule. The writer has seen only two cases of well-marked and fully developed gonorrheal salpingitis followed by pregnancy. No known internal or topical medication or treatment, except perhaps rest, has any effect to stay its progress. Such being the facts, should a gonorrheal tube in the acute stage be removed at once, or are there reasons for delay? The latter view is held by the writer for three reasons:

1. While the infection of the uterus, as before observed, may be gonorrheal, that of the tubes may be of a different and more virulent type; hence a radical abdominal operation at this time may be extremely hazardous.

2. A few women have borne children after an unquestionable gonorrheal salpingitis.

3. A very few women have carried gonorrheal tubes for years without apparent discomfort or effect upon health.

For these reasons the writer would delay total excision of the tubes, which is the only treatment to be thought of, until such time as pain or constitutional disturbance demands the intervention, provided, however, that the tubes are not distended with pus, in which case on account of the danger of leakage they should be removed at once, or, preferably, evacuated and drained through a post-vaginal section, as a preliminary operation.

ACUTE PERITONITIS OF GONORRHEAL ORIGIN

The inflammation is primarily limited to the vicinity of the tubes and Douglas' sac, accompanied by a small serous exudate with lymph flakes, and tending to end in absorption of the fluid with not very extensive but very firm adhesions. Recurrences are the rule. Ablation of the tubes, the focus of infection, is not advisable in this stage, for the reason that there is some danger from general peritonitis, but especially because there is a better way.

The experience of the writer would not sustain the contention of Pryor, who says: "Pyosalpinx never forms if the cul-de-sac is opened as soon as it is found that the infection has passed outside of the uterus and the tubes treated through the incision." By the time we can be sure that the infection has passed outside of the uterus there is already a salpingitis and generally a peritonitis. But this treatment is good because it will relieve the pain and fever, and put the patient in a safe condition for a radical operation later. Some patients, perhaps 10 per cent, are rendered so comfortable that they decline further operation. While never anatomically cured they are symptomatically relieved. Ninety per cent, in from a few months to two or three years, will have a recurrence of symptoms that will demand the extirpation of the tubes.

GONORRHEA BEFORE PUBERTY

About ten per cent of the female children admitted to the hospitals of our large cities have gonorrhea. All cases of leucorrhea in young girls should be considered of gonorrheal origin unless disproved by microscopic examination.

The soft epithelial structures of the vagina in children make it the favorite seat of gonorrhea contrary to what is found in adults. There is, compared with adults, a very slight tendency to invade the uterus and tubes. There is a much greater tendency to the invasion of the blood and lymph channels, and secondarily of the joints. Gonorrheal urethritis should be industriously treated by two daily instillations of the urethra with a 10-per-cent argyrol solution. The vagina should be irrigated every four hours with a 5-per-cent argyrol solution during the day, and at night the vagina filled with a 20-per-cent solution of the same remedy by means of an ordinary medicine dropper. Smears from the rectum should in every case be taken, and if the gonococcus is found the injection of a fluid dram of 20-per-cent argyrol once a day should be continued until after the disappearance of the organism. This is also the proper treatment for gonorrheal proctitis in the adult.

In very marked contrast to the rather slowly acting gonococcus and tubercle-bacillus is the fearfully rapid systemic infection by the streptococcus pyogenes. The same may be said of the staphylococci, except that they are usually less virulent. The local effect of these organisms is of much less importance than either the gonococcus or tubercle-bacillus. Laid upon the healthy epilthelium of the normal vagina these organisms are innocuous, and are destroyed by the uterine secretion. When, however, they gain access to the subepithelial structures by the traumatisms of labor, abortion, or instrumentation, so that they can circulate in the blood and lymph channels, their destructive power is manifest in a few hours.

An increasing knowledge of the etiology of infection is rapidly lessening puerperal and post-operative sepsis.

The same publicity advocated for gonorrhea should be given to the dangers attending criminal abortion, and the cold fact, that at no time during pregnancy is it anything but murder, should be fully appreciated in our offices and beyond our medical meetings. The woman who shrinks with horror at the slightest breach of etiquette, should, if possible, be made to realize the enormity of the crime of killing her own child.

TREATMENT OF ACUTE SEPTIC INFECTION

The chill, rapidly rising temperature, and increasing pulse, thirst, and restlessness are signals to be answered by a single cleansing of the uterus, 10-per-cent iodoform gauze drain; and if this does not bring about a rapid improvement, a wide post-vaginal incision with an ample drainage of the same material. Fortunately, in about 75 per cent of the cases the traumatism is limited, or the germ virulence diminished, so that the local effect is greater and the systemic less. The patient lives long enough for the development of an acute endometritis, salpingitis, and pelvic peritonitis. Perhaps when the physician is first called, he already finds a swollen, tender uterus, large tubes, and a fixation of the uterus with some peritoneal exudation. It is just at this time that a post-vaginal drainage is the most effective agent we possess for the cutting short of the inflammation. It is unnecessary and greatly to the disadvantage of the patient to compel her to pass days and perhaps weeks in pain and fever with increase of extent of peritonitis and resulting adhesions. By the time an exudation can be made out adhesions are already protecting the rest of the peritoneum. From the time drainage is established the peritonitis with its symptoms begins to abate. What reason therefore for waiting until a large abscess bulging out the cul-de-sac is formed? By this time the peritonitis is of wider extent, the adhesions stronger and more extensive, the patient more or less pyemic, the tubes closed at the fimbriæ, and pus and round-celled infiltration are showing the destruction going on in the tubes. Early vaginal drainage, if properly done so as not to contaminate the unaffected peritoneum, is safe. It does not, as claimed by Price, increase adhesions or make a later radical operation more difficult. On the contrary, it will leave the parts in the best possible condition for later conservative work on the tubes and ovaries. This the writer has proved time and again while making laparotomies in from eleven to twenty days after a post-vaginal section for acute infections. The rapidity with which exudates are absorbed, and the freedom from resulting adhesions is almost beyond belief. However, the patient should be informed in the plainest and most positive terms that the vaginal section in these cases is a life-saving operation only, and by no means will insure a radical cure. They may, however, except in case of gonorrhea, be given some hope that further operation may not be nececsary.

Acute abscess of the uterine walls, if incision and drainage do not afford immediate relief, calls for an early vaginal hysterectomy, for the reason that other abscesses are more than likely to be present, the result, without removal of the uterus, being a fatal pyemia.

CONCLUSIONS

A thorough understanding by the laity of the dangers resulting from gonorrhea and abortions would make the lives and happiness of thousands of women more secure, and do away with two-thirds of the work of the gynecologist.

The septic pelvic infections are essentially preventable.

A prompt rational treatment based on a knowledge of the bacteriology of pelvic inflammations will save many lives and cut short the period of suffering.

Early and efficient vaginal drainage when indicated will not increase the difficulties of a subsequent radical operation, but, on the contrary, will add to its safety, and help to make a later conservative operation more feasible and perfect.

THE EARLY DIAGNOSIS OF TUBERCULOSIS*

By W. H. Darling, M. D.

ST. PETER, MINN.

In this paper we will consider only chronic pulmonary tuberculosis as this is the form met with most frequently.

In the present state of our knowledge concerning this disease it does not seem necessary to dwell upon the importance of an early diagnosis. Knowing that if taken early fully 50, and some claim 75, per cent of all cases recover, we do not wonder that the medical literature of to-day is teeming with articles on this subject, and that few, if any, other morbid processes have been so exhaustively investigated and minutely described.

Tuberculosis is one of the most prevalent diseases. An Austrian army surgeon claimed that 68 per cent of the men in an Austrian regiment responded to the tuberculin test. Prof. Nagle says that at the Pathological Institute at Zurich signs of tuberculosis were found in 30 per cent of the autopsies, and a French pathologist claims that in Paris tuberculosis was discovered in 50 per cent of all cases in which post-mortem examinations were held.

In 202 autopsies held at the St. Peter State Hospital positive evidence of latent or active tuberculosis was present in 112; 59 of the 112 died of diseases other than tuberculosis, yet 38 of the 59 showed tubercles in the early stage of formation, while the remaining 21 showed scars indicating a recovery from the disease.

We have nothing new in symptomatology to offer. The field has been so thoroughly and well covered that we look in vain for some new and positive symptoms that will clear away the veil of doubt and uncertainty that surrounds the inception and progress of this most insidious of all diseases. Knowing that one out of every ten now die of this disease, and recognizing its curability if early diagnosed, we can but feel that the members of the medical profession are falling short of their duty. Too often a careful physical examination is not made when the physician is first consulted, because of the troublesome cough, the loss in weight, or the persistent feeling of languor; and symptoms which, if taken as a whole, would point toward the presence of some exhaustive disease, are treated as trivial.

---

*Read before the Minnesota Valley Medical Society, Mankato, Minn., December, 1903.

Whatever the avenue of infection, no local symptoms will become apparent for several weeks in any case, and more likely it will be months or even years; and though the local condition is present it becomes apparent long after the constitutional symptoms, because of our imperfect methods of diagnosis. The insane appear to be particularly prone to tuberculosis, partially on account of the depression attendant upon their mental state, but more largely owing to the overcrowding which must of necessity prevail.

I will endeavor to present for your consideration the facts discovered after the study of several hundred cases in the St. Peter State Hospital. Many of the cases we have had under observation from their inception to their termination. Heredity and predisposition are very important factors. Individuals possessing the long, narrow chest and depressed supra- and infra-clavicular regions have been the most frequent victims. Age also is important, the majority of our cases developing between the twenty-eighth and thirty-sixth years.

Making a careful review of the clinical histories of 52 patients dying of tuberculosis and coming to the post-mortem table, we find that the first symptom noted in 34 of these cases was progressive emaciation, this becoming evident months or even years before the local symptoms became apparent. This besides being one of the most early symptoms progresses as does the disease, the weekly use of the scales giving reliable information as to the advance of the disease.

The emaciation goes hand in hand with the anemia, the early blood-examination showing a decrease in hemoglobin, which becomes more marked as the disease progresses. Such writers as Cabot tell us that the only blood changes which occur in an unmixed tuberculous infection are those peculiar to secondary anemia, and that later when mixed infection does occur we have the changes common to pyemia. In nine cases of early tuberculosis we found a marked diminution in the percentage of hemoglobin without a corresponding decrease in the number of red-blood cells. In five of the nine cases we found leucopenia present, the number of leucocytes ranging from 1,200 to 3,000. In seven of the nine cases there was slight lymphocytosis; in two of the nine cases the number of small lymphocytes was diminished. In one case myelocytes were present to the extent of two per cent and mast cells two per cent. Poikilocytosis was present in two of the nine cases; and in six there were free nuclei. In our hands the blood examination has proven quite a disappointment, as by its use we had expected to gain considerable valuable data. We doubt if we shall ever be able to diagnose the presence of cavities through the blood-examination alone as is claimed by some.

In seven of these cases muscular weakness made manifest by a feeling of languor and a tendency to tire upon slight exertion was the first indication of the disease.

In fifteen cases the early emaciation and muscular weakness were accompanied by a slight elevation of temperature in the afternoon.

In 37 of the 52 cases there was acceleration of the pulse from the beginning.

Considering now the local symptoms we find that in six of these, cough was the earliest manifestation; in the remaining 46 cases the cough did not appear until the disease was well marked, and the destruction of lung tissue had progressed beyond the hope of repair. When the cough appeared early it was usually dry and irritating, and was noticed first in the evening on reclining; later the regular morning coughing spells developed.

One of the most valuable signs as showing the presence of tubercles or fibroid changes was diminished resonance. This was first noted over the left apex in 26 of our cases; in the majority the anterior portion of the apex was first involved; in twelve cases the right apex first showed diminution of resonance; in three cases the apices were simultaneously involved. In four cases the upper lobes were quite generally involved early, and in one the middle lobe of the right lung first showed signs of disease. In the remaining ten cases the area involved was not revealed by percussion. When we consider that there may be localized disease even quite extensive without producing marked change in the percussion note owing to the fact that the tubercles are scattered and that there may be considerable normal tissue between them, the difficulties in the way of making a correct diagnosis are apparent. In the earlier stages the percussion note is high, and considerable experience is needful to detect the change.

In 50 of these cases a harsh, rude respiratory murmur was among the early symptoms. Prolonged expiration was noted early in but six of these cases, but when confined to a small area we consider it of great diagnostic value indicating loss of elasticity of lung tissue.

Diminution of respiratory murmur was noted in 20 of the cases, showing interference with the entrance of air into the affected area.

Hemorrhage occurred in only six of these cases, and in but three was it an early symptom.

Cough was, as I have already said, an early symptom in but six of these 52 cases. In these six cases there was but little sputum expectorated, and no tubercle-bacilli were found. In the remaining 46 cases five were free from cough during the entire course of the disease; in 41 cough appeared late, and was accompanied as a rule by the expectoration of the typical tuberculous sputum containing large numbers of tubercle-bacilli. The point to be emphasized here is that if our diagnosis is to be a factor in effecting a cure, it must be made before the disease has so far progressed that expectoration occurs.

The value of the Diazo test in the early diagnosis has been considerably discussed, but as the reaction may be present in at least seven other diseases besides tuberculosis and typhoid fever we consider it of little value.

The *x*-ray may show some opacity after a large area has become diseased.

It is claimed that it is sometimes possible to make an early diagnosis of tuberculosis by noticing diminished or irregular action of the diaphragm on the affected side.

An increased tendency to nasopharyngeal or bronchial catarrh is often noticed in the earlier stages.

A neurasthenic condition or an inclination to melancholy is occasionally a very early symptom.

Koch's discovery of the use of tuberculin as a test of the presence of tuberculous conditions is certainly of the greatest diagnostic value. After the injection of tuberculin a group of phenomena follows, known as the tuberculin reaction, if tuberculosis exists anywhere in the body. Virchow and others have raised their voices in condemnation of this procedure, believing that the injection of this substance arouses the latent tubercle-bacilli, bringing into activity a process that might have lain dormant for years or might never have progressed beyond the site of the first infection. There may be some danger of this, but we have yet to observe any bad results from using Koch's old tuberculin in milligram doses. We would not for a moment consider using this preparation in a case where there was fever or any evidence of extensive disease, nor would we use it when certain of our diagnosis by other means. But where the symptoms are very obscure, considering the fact that if the disease is tuberculosis, and if we would arrest its onward march, we must make a diagnosis as early as possible, we should not hesitate to use it or submit to its use upon ourselves.

At the last meeting of the Minnesota Valley Medical Society I brought before the members five patients who had recently been subjected to this test. One of these, the case of sacro-iliac disease, has since died of chronic parenchymatous nephritis. The remaining four are in a better physical condition to-day than they were six months ago.

To bring more clearly before you the great value of Koch's old tuberculin in clearing up a doubtful diagnosis I will briefly review the clinical history of two of our cases.

CASE 1.—L. H——, admitted in June, 1898. Woman; aged 35; married; a housekeeper.

FAMILY HISTORY.—Four aunts and three uncles died of consumption. She had seven brothers and sisters living and in good health.

PERSONAL HISTORY.—She was very ill in infancy, having a high fever accompanied by convulsions. Her general health since had been fairly good.

PHYSICAL EXAMINATION.—At the time of admission, nutrition was slightly impaired; the thorax was long but fairly full; the scapulæ were prominent; the circumference of the chest was

74 cm., and the expansion 1.5 cm.; respiratory sounds were slightly roughened upon the left side anteriorly and in the axillary region. Nothing further of an abnormal character was detected.

During the next three years she enjoyed good physical health, her weight remaining at about 108 lb. In Nov., 1901, she had a mild attack of bronchitis during which she coughed and expectorated a small amount of sputum which contained granular leucocytes and staphylococci only. In the chest a few scattered râles were found which soon disappeared. During the following two years her physical health was good. In November, 1903, she had an attack of indigestion, and was put in bed; her temperature ranged from 99° to 100°, but soon subsided to normal. As a matter of routine the chest was given a thorough examination, and the following information obtained: The infraclavicular regions were slightly depressed; there was some diminution of resonance over the apices anteriorly. In the left infraclavicular region just below the middle third of the clavicle, crepitant râles could be heard on deep inspiration; just below this region in the third interspace a mucous click was heard at the end of inspiration. In the left axillary region there was a slight diminution in the respiratory sounds.

Because of the family history and the symptoms just described her case was looked upon with considerable suspicion. She was given hypodermatically one milligram of Koch's old tuberculin. At the end of twelve hours her temperature was 103°. In four hours more the temperature had dropped to 101°. In twenty-four hours the temperature was 99.2°. During this time the patient complained of headache, and at the height of the temperature felt nauseated, but experienced no other feelings of discomfort.

CASE 2.—H. A——, admitted to the St. Peter State Hospital November, 1898; woman; a native of Sweden; aged 44; weight 132 lb. Family history, good; and the patient had always enjoyed excellent health. At the entrance examination the chest was found to be round and full, circumference 85 cm., expansion 3 cm. Respiratory sounds were slightly roughened over the left upper lobe anteriorly. Examination of the other organs negative.

During the following two years her general health continued good. In January, 1901, a slight loss in weight was noticed, this amounting to five pounds in three months. During the next quarter she lost three pounds. For the next eighteen months there was nothing to indicate any physical change. Six months ago she was again noticed to be losing in weight, the loss was, however, very small, amounting to nine pounds in four months, and but for the frequent use of the scales it would not have been detected. She had also become somewhat anemic in appearance, and on November 20, 1903, was put to bed for observation and examination. The following changes were noted: Moist râles were present in the right infraclavicular region, and diminished resonance with a decrease of the respiratory murmur in the interscapular region. There was no cough, no expectoration, and no elevation of temperature. The examination of the urine revealed beginning interstitial changes. Examination of the blood showed slight diminution in hemoglobin, the red-blood cells were normal in number and appearance, but the leucocytes were markedly diminished. A few myelocytes were found, but nothing else out of the ordinary. She was given one milligram of Koch's old tuberculin. At the end of ten hours there was an elevation of two degrees in the temperature; at the end of twenty-four hours the temperature was normal. During the height of the temperature the patient complained of headache, and appeared drowsy. No other signs of discomfort were present.

It would have been some time before a positive diagnosis could have been made in either of these cases by ordinary means. But now, early in the process under proper treatment, we believe that the chances for recovery are good.

In summing up the data from these cases, the following conclusions are clearly justified:

1. That many of the symptoms formerly classed as early, really belong to the more advanced stages.
2. That cough, expectoration, and hemorrhage do not occur early in the disease.
3. That emaciation and muscular weakness are the first constitutional symptoms in more than 90 per cent of all cases.
4. That harsh respiratory sounds are the earliest local symptoms in 95 per cent of all cases.
5. Except for the early leucopenia and anemia pure tuberculosis has little effect upon the blood.
6. That the value of Koch's tuberculin, conservatively used, can not be overestimated.
7. Diagnosis by bacteriological examination can only be made after there is disintegration of the tubercles and free communication between a diseased area and a bronchus established. By the time the bacilli appear in the sputum the disease is in an active stage, and, as has just been stated, there is considerable breaking down of tissue. At this time our treatment can only be palliative, and we have but little hope of effecting a cure, though we can prevent the unfortunate victim becoming a source of danger to his associates.

THE HOSPITAL BULLETIN

ST. BARNABAS HOSPITAL

MINNEAPOLIS

A CASE OF ULCERATIVE COLITIS

In the Service of Dr. A. E. Benjamin

Mrs. P——, aged 29; one child 8 yrs. of age.

Family History.—Good.

Personal History.—Well until beginning of her present trouble, excepting dysmenorrhea, constipation, and occasional attacks of hemorrhoids.

About the middle of January, 1904, she began to have some intestinal and rectal trouble. Blood had been noticed in the movements ever since her first trouble in January. The quantity had steadily increased; the evacuations per day were from five to ten. Early in her sickness she stated that she had begun to take Rocky Mountain Tea, a cupful every day. This she continued for over a month. On Feb. 26th she had a severe attack of pain in the abdomen, while sitting at the piano. She went to bed and remained there. When seen, March 5th, she complained of a great deal of tenesmus and diarrhea, with the passage of some blood.

An examination revealed a tender small mass in the left pelvis. Examination of her rectum and vagina revealed a retroverted uterus incarcerated, and possibly an adherent left tube, which seemed to make the mass. Nothing was found by examining the bowel excepting the small mass. The blood that was passed was somewhat similar to currant jelly at times; some of it was quite bright and some dark, and indicated that the blood came from higher up in the canal, and had been acted upon by some of the secretions. There was a great deal of mucus passed, apparently some pieces of mucous membrane also. There were few petechiæ noticed on the abdomen about March 12th; these gradually increased in number. There was very little odor to the substance passed. The temperature ranged between normal and 102° F. She had very few tender places over the abdomen, but occasionally she would complain of tenesmus. The spleen was not enlarged, and the abdomen was not tympanitic, as a rule. Occasionally some well-formed stools were passed, but the majority consisted of liquid and bloody feces, portions of mucous membrane, mucus and pus. Nothing seemed to control the frequent evacuations, or diminish the amount of blood passed; on the contrary, they seemed to increase. About the 12th of March she vomited. This she kept up occasionally during the remainder of her illness. The vomitus consisted of bile and mucus.

Patient was removed to the hospital the 15th of March. Her symptoms continued to remain about the same, with an increasing quantity of blood passed. Hypodermics of ergot and morphin secured more rest; the vomiting became less, and the diarrhea subsided for a time. The evacuations became lighter in color, contained some serum, a small amount of blood, and some mucus. The temperature kept gradually rising; and the pulse became more rapid and of less volume. The patient gradually grew weaker, having had one or two spells in which the pulse was imperceptible at the wrist. She had a very weak spell near the middle of the night of the 21st. She revived for a time, but a little after 5 o'clock began to sink, and died at 6:30 a. m., March 22.

Post-mortem Findings

S. MARX WHITE, M. D., PATHOLOGIST

Autopsy Diagnosis.—1. Ulcerative colitis. 2. Appendicitis due to the colitis. 3. Perforation of dysenteric ulcer, with local peritonitis. 4. Left pyelitis with concretions.

Abdominal Cavity.—Omentum shrunken; transverse colon prolapsed in middle, reaching to two inches below umbilicus, forming a V with apex downward; at one point near middle the transverse colon is adherent to middle of sigmoid flexure; on separation of which small perforation of wall of colon appears and gas escapes; perforation at about apex of V; on each side intesinal wall injected, slightly doubhened; hepatic flexure congested; veins at region greatly dilated.

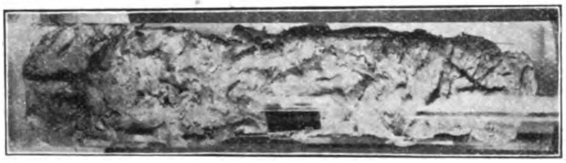
Spleen.—Very small, 1-3 usual size; capsule wrinkled.

Biliary Apparatus.—Gall-bladder adherent to omentum between duodenum and colon, also over duodenum; it contains a number of facetted concretions, and but little bile.

STOMACH.—Mucous membrane is somewhat thin; otherwise negative; pylorus normal.

APPENDIX.—The appendix is adherent to caput coli on its anterior surface by easily broken fibrinous adhesions, and is pale in places; walls somewhat thickened; some distension; congestion about adhesions; is filled with mucopurulent fluid; no ulceration.

LARGE INTESTINE.—Mucous membrane of cecum everywhere injected, and has disappeared in places, leaving muscle coats; ulcerated areas 1 to 1½ inches in diameter; margins of ulcers are raised, overhang slightly in some places, and have dropped into floor, and become adherent; on floor of some ulcers are tags of tissue attached by small pedicles, these tags being often hemorrhagic; in some places ulcers coalesce, leaving bridges of mucous membrane between; these are not common in cecum, but become common higher up into colon; at apex of V, described, small opening at apex of ulcer; ulceration extends to lower part of rectum.



Section of the ascending colon showing ulcers.

LABORATORY REPORT

R. L. TEBBITT, RESIDENT PATHOLOGIST

URINALYSIS.—March 15, 1904, amber; acid; albumen absent; Diazo negative; a few hyalin casts, squamous epithelial cells, and leucocytes.

March 20th. Amber; slight sediment; acid; sp. gr. 1004; trace of albumen; sugar absent; urea normal; Diazo negative; chlorides diminished; indican slightly increased; hyalin casts; epithelial cells; red and white blood cells.

BLOOD ANALYSIS.—March 11, 1904. Red count 5,000,000; white 26,600; differential count increase of polymorphonuclear neutrophiles; Widal negative.

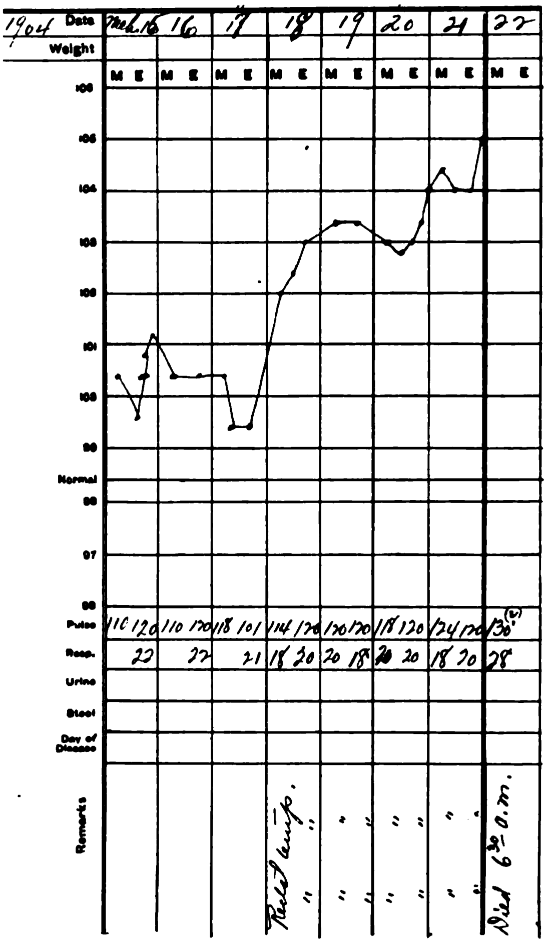
March 17th. White count 25,000; hemoglobin 80 per cent; Widal 1-25 dilution, partial, clumping fair with few bacilli motile.

March 21st. State Board of Health report: Widal 1-25 present; very few organisims remain motile; further examination with higher dilutions 1-50 and 1-75 shows the Widal agglutination reaction absent.

BOWEL MOVEMENT.—March 21st. Macoscopically, mucus with patches of bright blood about 3-5cm. in diameter; no odor; microscopically, numerous bacilli though not isolated; no ameba found.

At the time of entering the hospital the stools were of a coffee-ground color, foul odor, and watery, containing some mucus and clots of mucus and blood.

Attempts to isolate Shiga's bacillus or the ameba coli were unsuccessful.



Clinical Chart.

Drs. J. W. Bell, C. G. Weston, of Minneapolis, and W. J. Mayo, of Rochester, saw the patient in consultation, and a clinical diagnosis of typhoid fever, engrafted upon an ulcerative colitis, was made. The case has become of especial interest because of the comparison of the clinical diagnosis with the post-morten and bacteriological findings.

ERYSIPELAS ACCOMPANIED BY INTESTINAL HEMORRHAGE

IN THE SERVICE OF DR. FRANKLIN R. WRIGHT

Dr. E—— when first seen had a well developed case of erysipelas, which, starting from the nose, spread over the face and gradually involved the entire head. He ran a high temperature, but the case, although severe, was unmarked by any unusual symptoms until the third week, when a profuse hemorrhage took place from the bowel. He passed about a quart of bright-red blood, and that it came from the upper portion of the bowel was indicated by the fact that for the succeeding two or three days he continued to pass large quantities of black, tarry material. He remained in bed for three weeks, after which his condition gradually improved, and his further recovery was uneventful.

HOSPITAL HOUSEKEEPING — SWEEPING

The question of scientific sweeping is at present being thoroughly tested in some of our public schools, the necessity for more hygenic methods having been recognized by the Boards of Health and of Education, prompted by medical men and the Society for the Prevention of the Spread of Tuberculosis.

The city bacteriologist, Dr. Corbett, has by many and various tests proved that dry sweeping is the least desirable of all methods, such as oiled brooms, oiled sawdust, wet sawdust, etc. The methods employed, the results reached, and the opinions for or against each have been fully discussed in the daily papers; hence detail here is unnecessary, except to say that the public educators are in favor of a radical change. Whether these methods will succeed in hospitals remains to be seen. In many of them the dry, dusty method still prevails. Hospitals are surely in especial need of a reform that will check the spread of disease inside of its own walls, and therefore, the question of reform in sweeping is in order. A method that will collect the dust and at the same time preserve the condition of the floors is indispensable.

In some hospitals there are oiled and varnished floors; in others white pine, which may be scrubbed frequently. Any of the new methods will necessarily take up more time, because they will leave a certain amount of wet dust on the floor, which must be followed up by scrubbing the pine and polishing with an oiled cloth the varnished floors, dusting being done in the usual way with a damp cloth. The European hospitals have adopted the wet sawdust sweeping almost entirely, but they, as a rule, have pine floors, and less critical patients than ours. Americans would object seriously to such annoyance as frequent scrubbing and washing around their beds, hence our floors are usually varnished and so are easily cleaned. The only way then is to take the dust up with a damp cloth, as sawdust, oiled or wet, will necessarily ruin the floors.

E. H.

WATERTOWN HOSPITAL

WATERTOWN, S. D.

TWO CASES OF OBSTRUCTION OF THE BOWELS, ONE CASE COMPLICATED BY TETANY: RESECTION OF THIRTEEN INCHES OF ILEUM —RECOVERY; RELIEF OF CONSTRICTED BOWEL—RECOVERY

OPERATIONS BY DR. J. E. MOORE, OF MINNEAPOLIS

CASE I

On April 1, 1904, Dr. H. M. Finnerud, of Watertown, was called into the country to see a young man sixteen years old, who had been taken suddenly that morning with severe pain and vomiting. Upon examination he found a right inguinal hernia, which could not be reduced. The case proved to be one in which the testicle had never descended fully into the scrotum, and was accompanied by a congenital hernia. During childhood the parents had not noticed the abnormal condition, and when the boy grew old enough to notice it himself he was too modest to mention it to anyone, so he grew up without anyone but himself knowing of his affliction, until the hernia became strangulated. The tumor was quite large and very tender. At first the vomiting and pain were very severe; temperature normal. After he was removed to the hospital, all of the symptoms except the swelling subsided, so that on the morning of the operation he had a normal pulse and temperature, and was not vomiting.

Operation was performed by Dr. Moore on April 2d.

Since the only symptoms remaining were the swelling and tenderness, and owing to the comparatively short time the hernia had been irreducible, it was expected that a partly constricted omental hernia would be found. It consisted, however, of a loop of small intestine which was tightly constricted at the inner ring, and was black and hopelessly gangrenous. A piece of the gut thirteen inches long with the accompanying mesentery was removed, and an end-to-end anastamosis made with a Murphy button. The upper part of the hernial sac was removed, and the radical operation for hernia performed. The lower part of the sac was stitched over the testicle to form a tunica vaginalis, and the organ crowded well down into the scrotum. The patient was put to bed with a pulse below 100, and in good general condition.

He made an uninterrupted recovery, passing the button on the eleventh day.

There are two remarkable features about this case: First, the subsidence of vomiting and the general good condition in the presence of gangrenous gut; and, secondly, the absence of shock or any bad symptoms following the operation.

CASE 2

A young man, twenty-eight years of age, gave a history of having suffered from a number of attacks of very severe pain in the upper part of the abdomen accompanied by vomiting. These attacks continued from a few hours to a few days, when the symptoms all disappeared leaving the patient in seemingly good health. These attacks were never followed by jaundice. On April 15, 1904, he suffered such a severe attack that Dr. R. F. Campbell, of Watertown, was called to a neighboring town to see him. His condition was so alarming that the doctor ordered him to be taken to the Watertown Hospital. On the morning of the operation, April 18, his bowels moved freely, his abdomen was very slightly distended, his pulse was 125 and feeble, he was vomiting enormous quantities of greenish colored liquid with a slightly fecal odor, his face was pinched, and he looked as if he were going to die very soon. His temperature was normal, and he was in a cold perspiration. He complained of excruciating pain in the gall-bladder region and across the back opposite the diaphragm. The muscles of his face, abdomen, and lower extremities were in a condition of tetany. The spasms were so severe at times that it was difficult to hold him on the bed. An accurate diagnosis was impossible, and the case seemed hopeless, but it was concluded to make an exploration over the gall-bladder, hoping to find some faulty mechanical condition which could be relieved.

Operation was performed at 10 a. m. by Dr. Moore. An incision was made through the right rectus muscle. The gall-bladder was found normal. The incision was extended sufficiently to allow an examination of the appendix, which was found normal. A search was then made in the middle of the abdomen where a dense band was found extending from one loop of small intestine to another, which was partly constricting a large amount of the upper bowel. The gut was deeply congested, and at one point directly in contact with the constricting band was quite dark. The band was cut loose from its attachments close to the bowel, and the peritoneum brought together over the raw surface on the bowel by purse-string sutures. The band was made up of connective tissue and peritoneum. The patient was in such a desperate condition that it was feared he might die on the table. The condition of tetany was so marked in the abdominal muscles that it was almost impossible to close the abdomen notwithstanding the fact that the chloroform was pushed to the limit. The patient was put to bed at 11 o'clock with a pulse that could scarcely be counted, and seemingly in a dying condition. At 1 o'clock he was awake, vomiting some, pulse 125. He was having repeated convulsions so severe that it was necessary to hold him in bed, and his condition was seemingly hopeless. He was given full doses of morphia and strychnia. At 6 o'clock he had stopped vomiting, had rested some; convulsions were less frequent and much less severe; his pulse was 112, and he seemed better in every way. From this time on his improvement was constant until he made a complete recovery. The stitches were removed on the tenth day, and union was found perfect, notwithstanding the intense pressure caused for the first few hours by the tetany.

This case had many features of unusual interest. The early and continuous vomiting was due to the fact that the obstruction was high up. This also explains the absence of marked tympany after four days of suffering. The constant and severe pain across the back was a marked and unusual symptom. The tetany was doubtless due to the pinching of the jejunum, and the consequent changes therein.

It is possible that the condition of tetany exaggerated all the other symptoms and led all of the physicians who saw him to believe that his condition was worse than it really was, but he certainly looked and acted like one about to die.

Whether his former attacks were due to inflammatory conditions which caused the band, or whether they were due to obstruction which nature relieved, it is impossible to say in the absence of an accurate history, but, doubtless, both conditions have obtained at different times.

CLINICAL MICROSCOPY

RING BODIES IN ANEMIC BLOOD

In the Journal of Medical Research, Vol. IX, No. 1, Richard Cabot first described and pictured certain ring-like bodies, which he found in the red-blood cells of some cases of pernicious anemia, lead poisoning, and leukemia. He believed that these bodies were not parasites, but had some connection with the nuclei formerly possessed by the red cells. Microphotographs were published 'showing these bodies ring and double ring, oval, and S-shaped within the red cells, also a few extra cellular forms. In a later communication (Bost. Med. & Surg. Journal, Vol. 150, page 321) he again refers to these bodies, stating that he has found them in cases of pernicious anemia, in lymphatic leukemia, and in secondary anemia from lead poisoning.

In 4 cases of pernicious anemia, in 10 cases of leukemia, in 9 cases of secondary anemia, and in 25 cases of various skin diseases they were absent from the blood. Simon (Clinical Diagnosis, page 67) confirms Cabot's findings, but says that they may be found in apparently normal red corpuscles, and thinks they bear some relation to the nucleoids. Cabot attaches no special diagnostic importance to these bodies, and describes them simply for their scientific interest.

OPPLER-BOAS BACILLUS

In the Deutsch. Med. Wochenschr., 1895, No. 5, Oppler and Boas discribed a long bacillus which they found present in the stomach-contents of many cases of carcinoma of the stomach. The organism was non-motile, unusually long, and often the bacilli were joined end to end into long threads or zigzag lines. They stained well by the ordinary methylene-blue dyes.

Since their discovery it has been established that these bacilli can produce lactic acid, and it is probable that they have to do with the large amount of lactic acid encountered in the stomach-contents of cases of cancer.

They are, however, not the only organisms that produce lactic acid in the stomach. That these bacilli are diagnostic for carcinoma of the stomach has been disproven by Schlesinger, Rosenheim, Richter, and others. They are present also in some cases of stomach disease where free HCl is present.

Isolated bacilli of this type, and not to be distinguished from them, are seen in many forms of stomach disease aside from carcinoma. As a rule they are present in large numbers only in diseases of the stomach where lactic acid is present and hydrochloric acid absent.

Cancer of the stomach being the commonest disease which meets these conditions the Oppler-Boas bacillus has come to have a certain diagnostic value. When the diagnosis of carcinoma of the stomach is in doubt, the presence of these bacilli in large numbers adds a point in favor of malignant disease; present in small numbers or singly, no conclusion can be drawn either for or against cancer of the stomach.

GEORGE DOUGLAS HEAD, M. D.

NORTHWESTERN LANCET

A SEMIMONTHLY MEDICAL JOURNAL

The Official Organ of the Hennepin County Medical Society

W. A. JONES, M. D.................EDITOR

Editorial Office, 515 Pillsbury Building

W. L. KLEIN, PUBLISHER

SUBSCRIPTION, $2.00 A YEAR.

839-840 Lumber Exchange....................Minneapolis

MAY 15, 1904

THE MINNESOTA STATE MEDICAL SOCIETY

The meeting of the State Medical Society, June 1, 2 and 3, should be a success, and it is expected that the meeting will be the largest in the history of the society.

If it is not well attended it will show an unfortunate lack of interest among the men in the profession. The time of meeting has been so arranged that the alumni of the universities will come to Minneapolis during commencement week, when old acquaintances can be renewed and new ones formed in the easiest possible way; at the same time the visitor can absorb sustenance of all kinds, intellectual and material.

The program is unusually good, with papers by well-known state residents on practical subjects.

Dr. Alex. Hugh Ferguson and Dr. Edward Ochsner, both of Chicago, will give surgical addresses. Both men are surgical authorities as well as being interesting personally.

The entertainment of the society will be provided by the physicians of Minneapolis in a smoke-social. This will be strictly informal, and will be enlivened by a vaudeville performance. Refreshments of all kinds will be found in an adjoining room in order that those who do not believe in eating or drinking after dark may not feel that they must remain away. It is at the social meetings that old friendships are cemented, and new friends found.

The profession of the state are urged to come prepared to discuss the papers, and participate in the evening function.

The House of Delegates will do their first real work. Doubtless its meetings will be interesting as many new points will come up for settlement.

Friction in county societies, questions of ethics and adjustments with the A. M. A. requirements will give the business of the society an air of importance.

If this meeting is not well attended it will be due to the time of meeting of the A. M. A. the following week.

MEETING OF THE A. M. A.

Atlantic City is the ideal meeting-place of large bodies.

From June 7th to 10th the doctors will crowd the hotels and the board walk. The accommodations will suit individual tastes, including purses. The railroads will sell tickets for one fare plus one dollar. The hotels will not be exorbitant in their charges, and the weather will doubtless be all that can be desired. A week or two at Atlantic City should clear the cobwebs from one's brain; the doctor is no exception to this necessity, and should avail himself of such house-cleaning facilities. The program is exceptionally good in all sections; and symposiums on various medical and surgical topics command conspicuous places.

The past year has noted many additions to county and state organizations, thus adding to the membership of the A. M. A.

Since the adoption of the new organization methods there has been an increased activity among medical men to form or join medical societies, and this has stimulated interest among others who were formerly indifferent, and has aroused the profession to the necessity of keeping up with professional advance rather than the accumulation of non-professional moss or rust.

In a recent number of the Outlook medical societies were classed among labor unions. The article stated that medical societies are formed for the purpose of protection to individual members, leaving out the real object of medical societies, namely, scientific medical progress. If medical organizations are in the same class as labor unions, it would be well for the latter to study and follow the methods of the former. Medical societies mean broadmindedness, liberty to all worthy workers, indifference to those who are incompetent, and the crushing out of those who are knaves. The unselfishness of the profession is found in its efforts to stamp out disease and protect the public health regardless of class or caste. The last thing the medical man considers is self-protection: he stands all kinds of abuse, and attends to his work; he assists his fellow in trouble, and helps his less competent associate in time of trial and distress. He would not stoop to methods of the boycotter, and freely steps aside to allow another physician to usurp his place, unlike other labor organizations. He is like them only in that he labors and belongs to a society, but for a somewhat different purpose,—liberty, equality, broad methods of education, a constant striving to overcome disease and to protect his fellow man. His compensation varies, and usually is insufficient to maintain him or his family after him in comfort.

The A. M. A. is a large body of medical men who may in time attempt to provide legislation with suggestions or demands, not from a commercial standpoint or for personal advance, but for the good of the people and nothing else. It will be a long time before the people or legislative bodies will understand the protecting influence of the medical men; when they do they will heartily co-operate for the benefit of the masses.

It is the duty of every doctor to promote the interests of the profession, and the magnitude of the A. M. A.

CERTIFIED MILK

At the May meeting of the Hennepin County Medical Society a dairyman asked for an endorsement for his certified milk.

The milk has been passed upon by the commission for the city, and was recommended as pure and in keeping with the demands of the inspector.

The request created much discussion pro and con, and was finally referred back to the Milk Committee of the society, with a suggestion that further investigation would be advisable.

One objection offered was the time which elapsed from the bottling of the milk until it reached the consumer—from thirty-six to forty-eight hours. One member reported the milk unclean; other members endorsed it unqualifiedly, saying that it was clean, had an abundance of cream, and was relished by children.

One or two confessed that at first the milk was so entirely different in its tasting qualities that it required an education to develop a liking for it. Then, too, as it was distributed by a manufacturing milk concern a suspicion, although unfounded, that the product of one dairy was unequal to the demand, grew upon the members.

In all probability the Milk Committee will investigate the matter carefully, and will be able to report favorably at the June meeting.

To gain the endorsement of a medical society, the dairyman must be able to demonstrate every step in the process that results in pure, clean milk. No dirt of any kind should appear in the sealed bottle, the milk should be delivered while fresh, should be free from all artificial preservatives, and should contain the proper percentage of the fats before a certificate of endorsement be issued by a medical society.

Certified-milk dealers should be encouraged by physicians to qualify before the Milk Commission.

It is well known that physicians are frequently lax in their methods of investigation, indifferent to possible dangers, and unwilling to insist that the producer live up to the strict requirement of the law. Even the Milk Commission or the inspectors may think it wiser to gradually educate the producer in his duties, but if certified milk is to become an important food factor, it must be absolute, and fulfill all the law's demands, then and then only can certified milk be recommended by the medical profession.

Clean milk is much better than the milk obtained from many dairies, but absolutely clean milk must be above criticism.

REPORTS OF SOCIETIES

MINNESOTA ACADEMY OF MEDICINE

A. W. DUNNING, M. D., SECRETARY

The regular meeting of the Academy was held at the West Hotel, Minneapolis, Wednesday, May 4th, at 7 o'clock, Dr. James H. Dunn, vice-president, presiding. There were 25 members present.

Dr. Louis B. Wilson, of Minneapolis, was elected to active membership.

Dr. James H. Dunn presented a specimen and reported a case of fibroid tumor of the uterus, which was probably undergoing carcinomatous degeneration. The subject was discussed by Dr. J. L. Rothrock.

Dr. Dunn also reported briefly "Two Cases of Thrombotic Gangrene from Injury to the Popliteal Artery." This was discussed by Dr. H. B. Sweetser, of Minneapolis, and Dr. J. L. Rothrock, of St. Paul.

Dr. J. G. Cross read his inaugural thesis entitled "Non-Valvular Heart Murmurs," which was discussed by Drs. Hunter, Nippert, Roberts, Staples, Rees, Head and Tomlinson, and by Dr. Cross in closing.

BOOK NOTICES

VON BERGMANN'S SURGERY. To be complete in five imperial octavo volumes, containing 4,000 pages, 1,600 engravings and 110 full-page plates in colors and monochrome. Sold by subscription only. Per volume, cloth, $6.00; leather, $7.00; half morocco, $8.50, net. Volume I just ready. 820 pages, 321 engravings, 24 plates.

The first volume of "A System of Practical Surgery" by the world-renowned clinical surgeons Prof. E. von Bergmann, of Berlin; Prof. P. von Bruns, of Tübingen, and Prof. von Mikulicz, of Breslau, has just appeared from the press of Lea Bros. & Co., of New York and Philadelphia. This volume consists of 936 pages of splendid paper, printed from large new type, and the entire text is profusely illustrated.

The mechanical part of this book is in every respect equal to the original German edition. This volume is one of the most complete general treatises of the surgery of the head that has ever been published. It is an excellent translation from the second German edition made by Drs. Wm. T. Bull and Walton Martin, of New York, which fact ought of itself to be a sufficient guarantee that the task of translating and editing has been well performed.

The work is an encyclopedia in reality, as many of its chapters exceed in scope those of a general text-book or even those of a special treatise.

While the work is chiefly clinical in character, it contains abundant pathological data, details of original research, and statistical facts, which make it the most important surgical work extant; and no doubt the American edition will be in fully as great demand as are the editions in the German, Spanish, and Italian languages.

PAIN AND ITS INDICATION. An Analytical Outline of Diagnosis and Treatment. By Edward C. Hill, M. S., M. D. Chicago: G. P. Engelhard & Company.

We have wondered who is bold enough to discuss the symptom of Pain since Hilton's famous work on Rest and Pain. Dr. Hill's is a more modest attempt. From his titles we gather that the doctor's previous efforts in authorship have been along chemical lines. But, then, was not Pasteur a chemist?

In the foreword the statement that this outline contains reference to all sorts of pains systematically arranged for comparison in a few types and regions, and fully indexed with a list of text books—English or translations—gives the scope of the book.

Headache opens the list with the different kinds defined in a syllabic way and then excerpts from different authors of treatment applicable to each.

Then follow some three hundred pages about other regional pains, all annotated, catalogued and ticketed off with the appropriate authorized treatment—a great convenience to the hurried practitioner. The inconclusiveness of this mode of practice is that it is usually applied with more knowledge than wisdom.

The Commoner Diseases of the Eye. How to Detect and How to Treat Them. By Carey A. Wood, C. M., M. D., Professor of Clinical Ophthalmology in the University of Illinois, and Thomas A. Woodruff, M. D., C. M., Professor of Ophthalmology in the Post-Graduate Medical School, Chicago. G. P. Engelhard & Company, Chicago.

The following is quoted from the preface of this book: "In the present volume it is intended to amplify this work so that it shall consider ophthalmology from the standpoint of the physician in general practice. It is proposed, mainly by describing only the commoner diseases of the eye (never using a technical term when a simpler word is available), by numerous illustrations, synopsis-headings, and a complete reference-index, to popularize a study that is too often considered difficult and unprofitable.

"We are well aware that the conduct of the busy practitioner toward such ocular affections as occur in his practice usually differs from his treatment of most other diseases. The acquirement of even a moderate degree of knowledge respecting diseases of the eye—especially those requiring the use of the ophthalmoscope—necessitates considerable study and frequent chances for observation. The every-day routine of practice affords neither opportunities for the one nor time for the other, and it is not, therefore, surprising that such cases are usually referred to a confrere who makes a special study of them.

"While one must admit the advantages that, on the whole, accrue to both patient and medical man from such a disposition of this class of maladies, it is not without its drawbacks.

"There is a fairly well-defined and important group of diseases, affecting various parts of the visual apparatus, whose signs and symptoms are especially prone to be overlooked or misinterpreted by the general practitioner simply because he has abandoned the inspection of the eye. In this group are some that call for recognition in tones so loud that they ought to be detected at once by any man who will use his ordinary powers of observation, while others require stricter attention upon the part of the observer. Many of them, too, are by no means simple matters. When not recognized and promptly treated by the surgeon, they go on, in the ordinary course of events, either to a more or less rapid destruction of the organ itself, or to considerable impairment of its function. The claims which the study of this particular set of diseases makes upon the profession become all the more urgent when one reflects that in every instance an early diagnosis may be correctly made by the exercise of the same quality and amount of care and intelligence which are commonly brought to the investigation, let us say, of affections of the lungs and uterus."

The reviewer has been urging for some years the necessity of such books as this one in place of the many larger text-books of which there have been a surplus. These larger text-books are supposed to cover the field for the student, general practitioner and specialist. As a matter of fact they are not suitable for the student or general practitioner, and are not exhaustive enough for the specialist. It seems, therefore, that there is an excuse only for the publication of two classes: one suitable for the student and general practitioner, and one for the ophthalmologist. While this volume does not include many of the rarer diseases and affections, it does include everything of importance that the general practitioner may have use for, and the authors have dwelt more in detail upon such important diseases.

The book is well illustrated, and the illustrations are especially well chosen, many of them being original with the authors. It is a book which the general practitioner will find of more value than many of the larger text-books, and should be in the possesssion of every general practitioner who is obliged to do eye-work.

Frank C. Todd, M. D.

NEWS ITEMS

Dr. O. Julian, of Shelly, has moved to Mentor.

Dr. E. W. Bayley, of New Ulm, has moved to Sleepy Eye.

Dr. F. S. Patterson, of Lambert, expects to move to Terrebonne.

Dr. Garrett Murphy, of Garden City, has moved to Pine River.

Dr. G. A. Stager, of the State Reformatory, at St. Cloud, died last month.

Dr. Fred Schacht, of Fergus Falls, has decided to locate in Seattle, Wash.

Dr. O. F. Peterson, of Northwood, N. D., has gone to Larimore to practice.

Dr. C. F. Brigham, of St. Cloud, is doing post-graduate work in Chicago.

An emergency hospital will be built on the State Fair grounds this summer.

Dr. T. W. Welsh has moved from Lisbon, N. D., to Braddock, in the same state.

Dr. O. A. Burton and Miss Alice E. Lee, both of Albert Lea, were married last month.

Dr. Jules Gendron, Hamline, '96, has moved from Red Lake Falls to Grand Rapids.

Dr. C. J. Ringnell, of Minneapolis, has returned from a trip to the South and Cuba.

Dr. G. D. Rice, a recent graduate of the State University, will remove from Duluth to Albert Lea.

Dr. L. F. Babcock, of Deadwood, S. D., has been appointed a member of the S. D. State Board of Health.

The marriage of Dr. T. H. MacLachlan, of McHenry, N. D., to Miss Helen Oliver, of the same place, is announced.

Dr. J. G. Conly, the oldest practicing physician in South Dakota, died last week, at the age of 66. He graduated from Rush in '62.

Dr. E. A. Eberlin, of Glenwood, has been in the hospital at Starbuck, on account of blood-poisoning, resulting from an operation.

Dr. C. S. Ingersoll, a pioneer physician of Montana, who has practiced over twenty years at Deer Lodge in that state, died last month.

Dr. N. F. H. Doleman, a homeopathic physician on the staff of the State Insane Hospital at Fergus Falls, will soon take up practice at Battle Lake.

The Adams Hospital, of Nashwauk, has been re-opened, and is in charge of Dr. J. L. Shellman, of Hibbing, who is a recent graduate of the State University.

Dr. J. R. Hawkins, a prominent physician of Sioux Falls, S. D., died on the 3d inst., at the age of 30. Dr. Hawkins was a graduate of Rush, class of 1900.

Dr. Lyman W. Denton, formerly of Minneapolis, died in California last month. Dr. Denton was a man of considerable literary ability, and wrote some very creditable verse.

The Red River Valley Medical Society claims to be the fourth in size in the state. At its quarterly meeting last month plans were made for a joint meeting of the four northern societies in July.

Dr. Frederick A. Kiehle, a graduate of the State University, class of '01, will be married on the 19th inst. to Miss Rose E. Stevens, of this city, and will take his bride to West Jordan, Utah, where he is now practicing.

The names of Dr. H. A. Tomlinson, of St. Peter, and Dr. Dwight S. Moore, of Jamestown, N. D., appear upon the program of the American Medico-Psychological Association, which meets in St. Louis, May 30th to June 3d.

At the annual meeting of the State Board of Medical Examiners, held last month, Dr. A. G. Stoddard, of Fairfax, was elected president, Dr. Wm. Davis, of St. Paul, refusing re-election. Dr. C. J. Ringnell, of Minneapolis, was re-elected secretary and treasurer.

Notice was made in these columns, in our last issue, of the accident by which Dr. D. B. Pritchard, of Winona, had a leg broken. It is with great regret that we record that amputation of the leg, just above the knee, became necessary. Dr. Jane H. Dunn, of Minneapolis, performed the operation.

DOCTOR:—Do you wish to sell your practice? For particulars address Cramer-Krasselt Co., Milwaukee, Wis.

PHYSICIANS LICENSED AT THE APRIL (1904) EXAMINATION TO PRACTICE IN MINNESOTA

We publish this list in this form at the request of the State Board of Medical Examiners, in order that the names may be pasted in the Official Register, copies of which are sent free by the Board to anyone who applies for the same and remits five cents to pay the postage.

Adair, F. L. (R); Rush, 1901; April 22, 1904..................Minneapolis
Böckman, M. W. H. (R); Uni. of Minn., 1903; April 22, 1904......St. Paul
Forbes, H. J. (R); P. and S., Chicago, 1903; April 22, 1904...New Hampton, Ia.
Skelsey, A. W. (R); Northwestern, Chicago, 1902; April 22, 1904...Fargo, N. D.
Thom, J. W. (R); Hamline, 1903; April 22, 1904................Minneapolis
Voges, A. E. (R); Uni. of Minn., 1903; April 22, 1904..............St. Paul
Williams, R. V. (R); Bennet Med. Col., 1901; April 22, 1904........Rushford

NORTHWESTERN LANCET

A Semimonthly Medical Journal

VOL. XXIV JUNE 1, 1904 No. 11

MEDICAL GRAFT*

BY J. H. JAMES, M. D.

MANKATO, MINN.

Graft has become a synonym for all the contemptible and illegitimate ways of obtaining money without adequate compensation. To call a man a grafter is almost as insulting as to call him a liar. Of all the despicable grafters, to my mind, the medical grafter is the most despicable. The medical grafter preys upon the sick and the afflicted, and takes advantage of their misfortunes and distresses, and while pretending to be a good Samaritan he bleeds and robs them to the fullest extent.

Among the many ways of medical grafting we look upon that of quackery as the most abominable, for, in most instances, the quack professes to be what he is not, and he lures his patients to his net in ways that would put even "the spider and the fly" to shame; and in addition to a depleted purse he often leaves them in a worse condition than he found them.

The semiquack comes next, and by this I mean the one who comes with his hard-earned diploma, but who decides that his oath to his Alma Mater, and his sense of honor count for nothing compared with the money that he hopes to gain by taking himself apart from the rank and file of his confreres.

Second to these, and fully as reprehensible, is the ethical grafter, and surely he must think he is ethical, for does he not sometimes stand high in the councils of the profession?—I mean the doctor who, while pretending to be ethical, gives or receives a commission.

At a recent meeting of The Doctors' Club of Chicago this matter was taken up as the subject of the evening; and an editorial, speaking of it, says: "Commission-giving is probably the most flagrant form of medical grafting; it is widespread, and, we fear, it has come to stay. The sooner the public realize it, the better." How many are there, do you think, that would care to have the public know that they pay a commission for cases referred to them by the family physician, or how many family physicians would like their patients to know that they received a commission from the surgeon or specialist to whom they referred them for consultation or treatment? How long do you think such men could retain the confidence and support of the community in which they practice if it were generally known that they were grafters?

If it were well understood, and the patient expected to pay not ony the consultant or the operator for his services, but, in addition, a commission to the family physician for sending him to the consultant, then the transaction would be bereft of the stigma of grafting which it has come to bear, and the event would be one on a par with other commercial transactions or enterprises where the agent or promotor is expected to get his commission for services in negotiating a deal. What would some of the Old-School physicians say were they to wake from their long Rip Van Winkle sleep and observe the flagrant methods of some of their successors today? Perish the thought of our great and glorious profession stooping to such dishonor. No wonder that we are not represented in the Hall of Fame, for are not some of us dragging our professional mantle in the dirt, and besmirching it beyond any further recognition or restoration to its original purity? And by so doing are we not bringing disgrace to ourselves and the profession as a whole? The editorial of which I speak says further:

---

*Read before the Minnesota Valley Medical Society, Mankato, May 3, 1904.

"As it is, many of our most eminent surgeons are to-day actually at the mercy of unscrupulous practitioners, for some of them have been unwise enough to commit themselves in writing, and to place in the hands of certain country physicians, who have brought them cases, evidence of corrupt practice, and the country doctor, on the other hand, can rarely resist the temptation of sending his difficult cases to the highest bidder * * *." "We believe the day is not far off when everybody will either avowedly practice medicine on a purely business basis and will openly acknowledge that he pays a commission to whoever refers a case, or, on the other hand, when the best men in the profession will be able to form a trust among themselves and pledge themselves not to give commissions * * *."

To my mind the giving of a commission is an evidence of weakness or incapacity in the man who gives it, and I do not believe that any man can retain his self-respect and carry on the practice underhandedly, as seems to be the custom where practiced at all. The tub that cannot stand on its own bottom is a poor tub, and a man who *must* hire some one to bolster him because he cannot stand alone—if he possesses full physical stature—does not deserve to stand, and the sooner he leaves the profession for which he is unfitted the better it will be for all. Such a man is not a true man; he is a fraud, a deceiver, a scamp, a grafter. Not many years ago I happened to be in a noted specialist's office, and he handed me a letter he had just opened. It was from a country physician describing a case he had just recommended to the specialist, in which he also referred to the patient's financial condition and the necessity for an operation which he felt unqualified to perform. This letter ended by telling the specialist what he was to charge the man and also what portion of the same he wished him to remit to the sender. The doctor asked me what I would do with such a letter as that? My reply was neither chaste nor refined, therefore I care not to repeat just what I did say. He then said: "I have never yet been guilty of giving a commission, and I do not propose to begin now if I never have another patient. If this patient comes to me I shall treat him as his condition warrants, and I shall charge him a fee commensurate with my services, but I shall not remit one cent to the writer of that letter."

Fortunately, I have been approached in this manner in but few instances, and on each occasion I have either been too obtuse to understand what the party wanted or have promptly stated my position. To what extent this practice is carried on in Minnesota I do not know, but I would be loth to believe that it is as common as the editorial referred to would lead one to suppose it to be in Chicago, but if it is so then it is a sad commentary on the moral status of a good many doctors.

From the letters I have received in answer to my query, I feel that it is carried on to some extent at least.

When a physician apparently in good standing will give a well-known and noted quack a prescription for the treatment of one of the quack's patients for the asking and a part of the fee—and such things have happened—it does not speak well for his moral sense or professional ability.

Outside the quacks and the semiquacks, I am inclined to believe that the profession of this state is remarkably free from the practice of this evil, and yet there are undoubtedly some who, either from forced necessity, jealousy, or greed, have allowed themselves to get into compromising positions with others whose god is money.

The commission practice is not only belittling to all concerned in it, but it is in direct opposition to the code as promulgated by the American Medical Association, which says: "It is derogatory to professional character for physicians to pay or offer to pay commissions to any person whatsoever who may recommend to them patients requiring general or special treatment, or surgical operation. It is equally derogatory to professional character for physicians to solicit or receive such commission."

I have in my possession numerous letters from prominent physicians in response to those of my own, asking for their opinion on this subject; and without exception I find a condemnation of the practice, all believing it not only degrading to their professional honor but likewise dishonest. One practitioner sends me the verbatim copy of a letter received by him. The letter reads as follows:

Dear Doctor—I have a patient here with cataract of both eyes. They are poor people. They want to know what your charge would be for operating on them. Charge enough so you can allow me something for my trouble.

Yours truly,

....

Wouldn't that paralyze you? They are poor people, I can't charge them anything for consultation and advice, but you charge them for both of us!

One of the letters to which I refer says: "These evils I do not think we can overcome by any amount of writing * * * There is one thing that occurs to me, and that is that the discussion of the subject opens the eyes of some men to the fact that certain men pay commissions, which they did not know before, and they at once look for these men." * * *

This is a feature I confess that had not before occurred to me, and had the subject not already been announced and this paper already begun I should probably have refrained from presenting it, for surely it was not my intention to put evil into other men's minds.

I shall be very sorry if my presenting this paper shall do harm, even if it is not productive of any good, and I can hardly bring myself to think that any member of this society would be guilty of such an act as to offer or accept a commission without the full knowledge of the patient concerned. My own feeling is that if this thing be common the sooner the public are made aware of it the better it will be for all, and I have the further feeling that it is a matter for lay as well as medical journalism. Possibly I am wrong in this, but it seems so to me at this time.

The inquiries that I have made have not been confined to specialists and surgeons alone, but have included the general practitioner, and, so far as I have heard, there seems to be but one opinion, and that is that this habit is vicious and degrading.

One instance from these letters is where a physician and his family have for several years been the patient at times of a certain specialist, but at the same time this physician was referring his cases to another specialist because the other always sent him a commission on every case. He was not willing to trust his own case to the commission-receiving man, but, as it was, he at last came to grief, as every wrong-doer is sure to do sooner or later—if he lives long enough. This man is now no longer looking for graft.

Gentlemen, we surely wish our children well; therefore we should all be careful of wrong doing, for is it not true that "the sins of the parent shall be visited on his children?"

In conclusion, I beg to present two letters published in the Journal of the American Medical Association. I present them for two reasons: First, they show the attitude of the two physicians towards this evil and its practice, and illustrate the difference in the moral status of the two classes of physicians, and, secondly, because the answers embody my ideas far better than I am able to express them, and practically cover the whole ground from the standpoint of an honest man.

Dr. H. V. Würdemann, Milwaukee, Wis.

Dear Doctor,—I have a male patient, 58 years old, coming to my office with inversion of both eyes. The disease has become very chronic (right eye), the upper lid has five rows of displaced lashes, and he has lost all power to open this lid. The left is not so bad, and it seems to me there is shrinking of the conjunctiva from chronic disease, especially trachoma. The sight is fairly good of both eyes. Now, what in your opinion do you think it would cost him, and what percentage will you give me if I send you all the eye-cases from out this way? The reason why I want to know about what it cost these farmers, is so I can tell them beforehand to get the money ready.

Yours respectfully,

....

P. S. Let me hear from you soon.

Milwaukee, August 24, 1903.

My Dear Doctor,—Your letter of the 19th inst. received. On account of the two business questions raised in it, and as I have been approached in like manner before, I have taken some time to formulate a proper answer. I intend that this correspondence shall be published for the benefit of other young physicians who might ignorantly at some time raise the same question to their personal detriment.

From the description of your case I think the eye condition is entropion of the lids, resulting from a cicatricial stage of chronic granular conjunctivitis (trachoma). Plastic operations on the eye lids will probably relieve the entropion.

It would not be fair to either the patient or physician to give an estimate cost of the work without proper examination. As you well know, professional fees are regulated by several factors: Kind of services rendered, amount of time consumed, and the financial standing of the patient. Thus there are no fixed fees for services, the only professional and legal requirements being that they be reasonable and such as are customary with physicians of the class to whom the consultant belongs. Customary office consultation fees in this country range from $5 to $25, depending on the standing of the consultant, as well as on the above-named factors.

The above would be a sufficient answer to your letter were it not for your question: *"What percentage will you give me if I send you all the eye-cases from out this way?"*

I take it for granted that you consider this question quite correct and honorable. I beg, however, to answer it curtly and completely. The presumable reason why one physician refers a case to the care of another is that he is either unable or unwilling to give proper attention to the patient, and sends him to the other's care purely for the patient's good and not as a business transaction. The giving or acceptance of commissions by physicians (or other people) for sending patients to consultants is an unethical and dishonest act, which has not been tolerated by true physicians from the days of antiquity. It is *dishonest* because the patient is deceived, and the collusion is more dishonorable than commission business between the doctor and druggist, which has long been frowned on by both the profession and the laity. It is a *cowardly* proceeding if either of the doctors is afraid to let the patient know for what he is paying, that which he has an ethical and legal right to know.

The medical profession is not a trade, and division of fees without the knowledge of the patient would be degrading the whole profession to the trade level.

I am not practicing medicine as a business, but as a profession, and while I am entitled to a fair fee for the knowledge, time and labor expended on the case, I cannot stoop to the tradesman's means of hiring drummers to get me patients. Your proposition would degrade you to a "hired man" or "barker" for the quack who might accept.

You may have, in some instances, spent time in caring for or in accompanying a patient to the consultant's office and felt delicate about submitting a bill for same. Why, that is pure cowardice, for the laborer is worthy of his hire.

On account of his financial condition your patient may not be able to pay the usual fee of the consultant or surgeon, yet you feel that you are entitled to some payment for such service as above stated. The matter is easily arranged: the patient has but to explain his circumstances, and the consultant should be willing to reduce his fees so that the family physician may get some payment, but *all this must be done with full knowledge and consent of the patient.* I am always willing, when necessary on account of the financial condition of the patient, to reduce my bill enough, even to giving my services gratuitously, to allow the patient to pay you, but I will not pay you a part of my fee because you are afraid to demand it of the patient.

In conclusion, I am willing to do any special work for you for what is a customary fee among specialists of my standing, for patients able to pay the same; for others who can pay but little, I am willing to do the work for the proportion of the usual fee they may be able to give me after paying for your services; and in cases unable to pay anything, I will cheerfully do the work without monetary recompense on your recommendation, but I will not hire any medical "barkers" to drum up trade.

My strongest reason, aside from the ethics of the case, for refusing your request is that I value the esteem of the general profession more than a business which I could not retain if I abandoned the customs and ethics followed since the days of Galen, yea, even from those of Aesculapius.

Yours very sincerely,
H. V. Würdemann.

NON-VALVULAR HEART-SOUNDS*

By J. G. Cross, M. S., M. D.

MINNEAPOLIS

In Two Parts—Part I

The origin of murmurs heard over the cardiac region, in the absence of valvular disease of the heart, is the subject of much speculation. In the attempt to explain these sounds according to one theory or another some confusion in the meaning of the terms used has resulted. Leube[1], uses the terms *accidental* and *functional* almost interchangeably. Sahli[2] describes non-valvular murmurs under the heading *accidental,* and objects to the terms *functional* and *organic,* as used by some German writers in describing the same sounds, because some accidental murmurs arise from anatomical change, and others, the regurgitant murmurs, from relative insufficiencies occurring in anemia, are, strictly, valvular sounds.

It cannot be doubted that murmurs not connected with stenosis or regurgitation at any of the valvular openings, accompany certain structural changes in the heart, and may therefore be accidental and at the same time be due to organic disease. As a consequence of the uncertain nature of the causes which produce them, the terms *anemic, functional,* and *dynamic,* have been somewhat loosely applied to heart-murmurs, but they may well define sub-classes of accidental sounds. The majority of American writers apparently follow this usage.

Non-valvular heart-sounds properly include those abnormal sounds whose cause is outside the heart, but which are audible over the cardiac area, and the accidental murmurs of whatever origin. With the increase in the number of cases carefully observed and reported, in many instances with post-mortem examination of the heart, it is evident that heart-murmurs arise from many widely different conditions. Along with the better knowledge of the causes producing non-valvular murmurs there is a constantly lessening number of instances referred to as functional. The later writers indicate the proper restriction of the term to those murmurs for which no tangible explanation can be found, aside from disturbance of normal heart-action without demonstrable cause.

Accidental murmurs are sometimes found in individuals otherwise apparently healthy; on the other hand, it has been demonstrated repeatedly that serious cardiac disease does exist without giving rise to valvular or other abnormal sound. In the Pathological Institute in Vienna evidences of endocarditis are sometimes shown by post-mortem section, of which there has been no clinical sign. Almost without exception, however, disease of the heart, pericardium, or commencement of the great vessels, is accompanied by murmurs or changed heart-sounds in some degree or kind, suggesting a condition otherwise unnoticed.

The greater number of text-books refer only briefly and in a very general way to accidental murmurs, treating of the hemic bruit and the murmurs heard in febrile states, leaving the impression with the reader that they are relatively unimportant, and chiefly of value in relieving the physician of the diagnosis of organic heart disease. That non-valvular heart-sounds have taken on a greater importance is evident from the later text-books and articles on the heart.

From the nature of the conditions which give rise to non-valvular heart-sounds no absolutely correct classification can be made, but in the hope that even a provisional classification may be useful, if it tends toward greater accuracy in diagnosis, the following table is offered:

NON-VALVULAR HEART-SOUNDS

- Intracardial:
  - Hemic
  - Dynamic
    - of nervous origin
    - of myocardial origin
  - Relative insufficiency of valve ring
  - Dilatation of commencement of great vessels
  - Structural anomalies
    - bands and cords
    - fenestration of valves
    - septum defects

---

*Thesis, read before the Minnesota Academy of Medicine, May 4, 1904.

        of muscles and chordæ tendineæ
    Functional
Exocardial
    Hemic
    Cardiorespiratory
    Pericardial
        friction
        bands
    Pleuropericardial
    Pressure
    Transmitted from aneurysm or veins.

The soft-blowing sound heard at times over the apex or the pulmonary artery in anemia or conditions of general weakness, called the hemic murmur, is the type of accidental heart-sounds. As a rule no abnormal condition in the heart has been found to account for its occurrence, and very ingenious theories are offered to explain it. That given by Sahli[4] appears to have fewer defects, and more to commend it, than many of them.

Assuming at the outset that valvular sounds, as has been experimentally demonstrated, are due to vibration in the blood-stream set up by a rough, uneven surface and a change in size of the stream from narrow to wider, or from wide to narrower, he states that most of the conditions for murmur production are present in the normal heart, and it is really more remarkable that no murmurs arise over the healthy heart than that in certain cases they appear without a heart lesion. He accounts for the absence of murmurs under physiological conditions by the fact that the normal velocity of the blood-stream is not great enough to produce murmurs, and for their occurrence, by increased velocity of flow. Two factors are concerned in increasing the velocity as far as the systole is concerned, the quickness of ventricular contraction, and the amount of blood thereby forced on, corresponding to the degree to which the heart is filled during diastole, as experiment has also proven. In one series of experiments it was found that the duration of the ventricular contraction was not prolonged as much as was the diastole, when the heart's action was slowed by vagus irritation. Lowered blood-pressure, he believes, by lessening the resistance to the systole, or changed innervation, by increasing the quickness of ventricular contraction, may possibly increase the velocity of blood-flow, and so give rise to hemic systolic murmurs. In favor of this theory, he adduces the familiar fact that sometimes accidental murmurs and many valvular murmurs arise only when the heart action is irregular and accelerated. The different anatomical configuration of the right and left ventricles and the conus arteriosus may account for the occurrence of accidental murmurs, under these conditions, over the left ventricle or the pulmonary artery, and rarely, on the contrary, over the aorta or right ventricle. The infrequency of diastolic murmurs is laid to the lessened velocity of the diastolic flow, and to the fact that there is less change in the size of the blood-stream between the auricle and ventricle during diastole than the change during systole between ventricle and large arteries. In proof of the truth of this theory, that the conditions for diastolic murmur production in the heart are not particularly favorable, is the fact that in mitral stenosis the diastolic murmur occurs only at the time of the presystolic increased auriculoventricular flow, and that no valvular defect proceeds as often without murmur as this. In regard to the occurrence of murmurs in anemia, Sahli separates the cases into the acute hemorrhagic and the chronic oligochromemias. In both cases the murmurs are due to increased velocity of the blood-stream, but the increased velocity in the first is caused by lessened blood-pressure, while in chronic anemias it is lessened cohesion of the blood itself, which favors a quicker flow; and possibly in the same thinness of the blood, murmurs arise with greater facility.

An elaborate series of experiments on dogs in Talma's[5] clinic seems to bear out the theory of Sahli. It was shown that the lack of quantity of blood alone rarely led to the production of heart-murmurs, but that hydremia favored their occurrence, especially if there was a plus quantity of blood of less than normal specific gravity. Lengthening the diastole favored the production of accidental heart-sounds, as did also strengthening the systolic contraction.

That the systolic accidental murmur heard over the heart in anemia is due to regurgitation is an old idea supported by some of the best clinicians. Vierordt[6], Musser[7], Osler[8], Taylor[9], Anders,[10] and Allbutt,[11] agree that in chlorosis, perhaps the commonest disease accompanied by hemic murmurs, as a rule the heart is slightly dilated, although they differ as to the mode of production of the murmur itself. Allbutt assigns pressure of a dilated auricle upon the pulmonary artery, and Musser the dilatation of the vessels near the heart in anemia, as the cause. Potain[12] considers them for the most part cardiorespiratory. Leube[1] says, "These murmurs can be attributed in large part to the fact that in anemia and some other conditions, the tone of the vessel-wall is lessened, and hence isochronously with the systole there occurs a forcible stretching, that is, a temporary dilatation of the vessel-walls and the formation of a murmur." He also cites the abnormally low blood-pressure in the aorta and pulmonary as another factor in producing murmurs. Broadbent [27] attributes the heart-murmur of anemia and febrile states to the nature of the blood and the innutrition of the tissues left behind by acute disease. As a cause of accidental murmurs in other conditions he says roughening of a valvular orifice may give rise to systolic murmur without offering any resistence to the blood-stream.

Hemic murmurs in other places than the heart are seemingly traceable to the same causes, generally to dilatation of blood-vessels alone, or together with thinness of the blood, and roughness of the vessel-wall or sometimes local constriction by pressure. Examples of these analogous sounds are the thyroid souffle, the venous hum heard in the bulbus jugularis, the fetal souffle in the cord, and the placental and splenic souffles. Fisher's murmur heard over the anterior fontanelle in rickets is a similar instance.

Some accidental murmurs are attributed to irregular heart-action, especially, excited and over-forcible beating of the heart and the name dynamic is often used to designate them. It is in agreement with Sahli's theory that an excited and tumultous beating causes increased blood-flow from the heart into the arteries, and a constant murmur. The two principal factors which disturb the muscular action of the heart are changed innervation and defects in the cardiac muscle itself. The cardiac neuroses characterized by attacks of palpitation, chest pain, arhythmia, and slow or rapid pulse, need no discussion. The claim is made, however, that attacks of this kind may lead to structural change in the heart. Beside paroxysmal disturbances, and the temporary over-action due to emotional causes, the heart appears to be in some cases disturbed by changed innervation due to the continuous lowered nervous states. Jacobi[18] mentions having observed systolic and diastolic mitral murmurs in some neurasthenic young women, in plumbism, and in bad adult masturbators. He also says that the Flint presystolic murmur sometimes present with aortic regurgitation may be explained by defective innervation, contrary to the generally accepted view that the sound is caused by the eddies in the blood formed at the mitral orifice by the regurgitant flow from the aortic opening. He expresses a further opinion that through change in the nerve-control of the heart a spasm, so to speak, of the orifices may be produced, and may result in stenosis or insufficiency at such openings. The observation of accidental regurgitant murmurs suggests a nervous influence, but the demonstration of such as a single cause cannot be made, apart from irregular and excited heart-action as a dynamic cause.

Instances of murmurs are often met with in individuals temporarily excited by the physician's visit, or the ordeal of an unwonted physical examination. A systolic bruit may arise under these circumstances while the heart is beating with unusual force and quickness, and immediately disappear when normal quiet is restored. It would seem more reasonable to suppose that the abnormal sound in the blood-current is produced by the increased force with which the blood is ejected from the ventricles than that the quite resistant rings about the auriculoventricular valves could be dilated through nervous disturbance, and again regain competency, in the short time under consideration.

The accidental murmurs, which are not uncommon in the course of fevers of somewhat long duration, have a special interest. Stokes[14] noticed that some of his fever cases developed bellows murmurs, or "a prolonged systolic sound," without carditis, which disappeared with convalescence. Webster's[16] description is characteristic of a class. He says:

"In febrile cases especially I have observed cases in which there was a systolic apex murmur, enlargement of the percussion flatness to the right, relative accentuation of the pulmonic second sound, the murmur having all the characteristics of quality, rhythm, point of maximum intensity, and area of audibility of an organic murmur with compensation damaged, the impulse diffuse and weak; and I have seen these cases proceed to a perfect recovery and disappearance of the murmur, and I cannot escape the conviction that these are cases of true relative insufficiency of the mitral valve due to weakness of the myocardium, the auriculoventricular opening not being sufficiently contracted to allow the valve-flaps to close, or else the distended (heart) walls cause enough tension on the chordæ tenineæ to draw the edge of the flaps apart, thus preventing perfect closure."

The more one hears these sounds and examines the records of cases in which such murmurs have been reported, the more is he inclined to believe that a relative insufficiencey of mitral or tricuspid, or both, is responsible for their production. A consideration of the pathology of the heart and blood-vessels in anemia and febrile states strengthens the belief. It is well known that other vital organs suffer a more or less degree of degeneration in fever, and that they recover. It is reasonable to suppose that the same is true of the heart. Hektoen[17] describes the change in the heart in acute infectious diseases (as typhoid, septicemia, diphtheria, and the like) as a parenchymatous degeneration, or cloudy swelling, as a result of the action of the toxins of the disease upon the cell protoplasm. There is demonstrable as a simple transformation, a swelling of the fibers, a disappearance of their striæ, and the deposition of fine granules, which, unlike fat, resist the solvent action of ether, but disappear on the addition of acetic acid. He says:

"When the changes are not too profound, restoration of the cells to their normal condition is possible. When, however, the cause is severe and its action prolonged, disintegration becomes more pronounced, and other degenerative changes, as fatty and hyaline, assist in the destruction of the cytoplasm. It is a well-established fact that acute infectious diseases may produce extensive alteration in the myocardium without necessarily involving the endocardium or pericardium. These alterations affect the muscular substance, interstitial tissue, blood-vessels, and nervous mechanism of the heart. Hyaline thrombi occur also in small arteries, and a round-cell infiltration of the interstitial tissue is an important accompaniment."

Jacobi says, after enumerating the degenerative changes which may take place in the heart-muscle due to infectious causes, that these changes may be local, and not accessible to percussion, and yet may cause accidental murmurs. Even when general, the size of the organ is not necessarily changed thereby. Thayer[18] says a murmur was noted in 39 out of 170 cases of typhoid fever, or 29 per cent. In 31 cases the murmur was a soft, systolic blow heard at the apex. It was transmitted to the axilla in only one case. In a number of cases this murmur disappeared in convalescence. In a series of observations which he (Thayer) made in order to discover the after effect of typhoid upon the heart and circulation he examined 182 cases after an interval ranging from three months to thirteen years since the attack of fever. These were compared for accuracy with a control series of perfectly healthy individuals of corresponding ages who had never had typhoid, and the typhoid series of cases showed a remarkable tendency to heart and arterial trouble.

The relative insufficiency which is frequently found in patients with chronic Bright's disease, or with emphysema of the lungs, plainly depends upon the increased blood-pressure, with or without a predisposing cause of dilatation in the heart-muscle itself.

It is, however, not necessary to the development of a dilatation of the heart that there be already a pathological change in the heart structure. Schott's heart measurements by the *x*-ray in young healthy athletes, before and after exercise, found a demonstrable increase in the size of the heart after the muscular work. Even strong emotion or excitement may cause a certain degree of dilatation of the heart by "preventing complete systolic discharge equally with physical exertion," as Jacobi says. Whether there is a structural change in the heart or not, under certain conditions of comparative over-strain there is a tendency to yield by distension, stretching, and dilatation, with relative valve-insufficiency as a consequence.

THE HOSPITAL BULLETIN

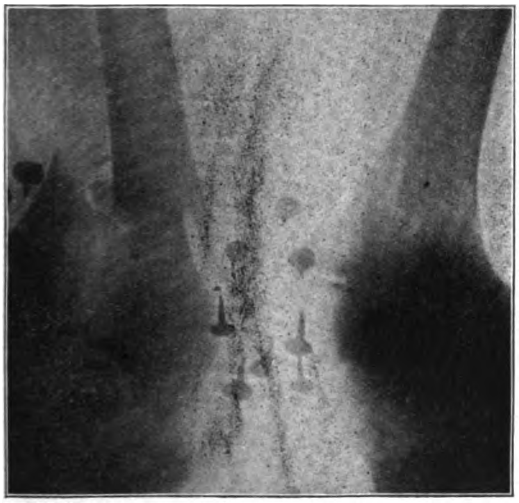
ST. BARNABAS HOSPITAL

MINNEAPOLIS

T FRACTURE OF FEMUR EXTENDING INTO KNEE-JOINT

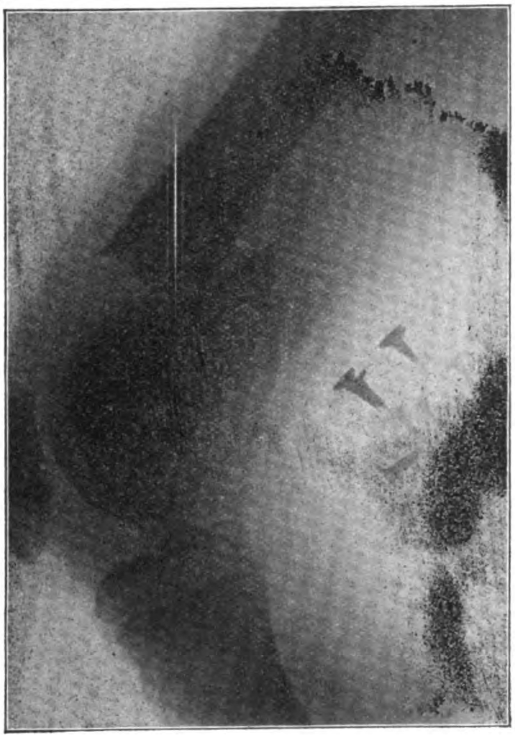
In the Service of Dr. W. H. Aurand

January 22, 1904, Dr. Aurand was called to see P. Y——, a boy 13 years old. He found a lad with complete fracture of lower end of right femur, which had resulted the same afternoon from a fall while skieing. The boy had fallen heavily at the bottom of a steep hill, striking the lower end of right femur against the curb-stone. At this time there was only a bruise at seat of injury and considerable swelling. The leg could be turned out at right angles to the thigh, showing the internal lateral ligament to be torn. Jan. 23d patient was seen, and with the assistance of Dr. Sweetser the leg was placed on an inclined plane, and the ends of femur were supposedly nicely approximated. The same afternoon he was taken to St. Barnabas, and the following morning two *x*-ray negatives were taken, an anterior-posterior, and a side view. These showed the fragments to be in far from good apposition, and also showed the extension of the fracture down between the condyles.



1. Anterior and posterior views after the fracture had apparently been reduced.

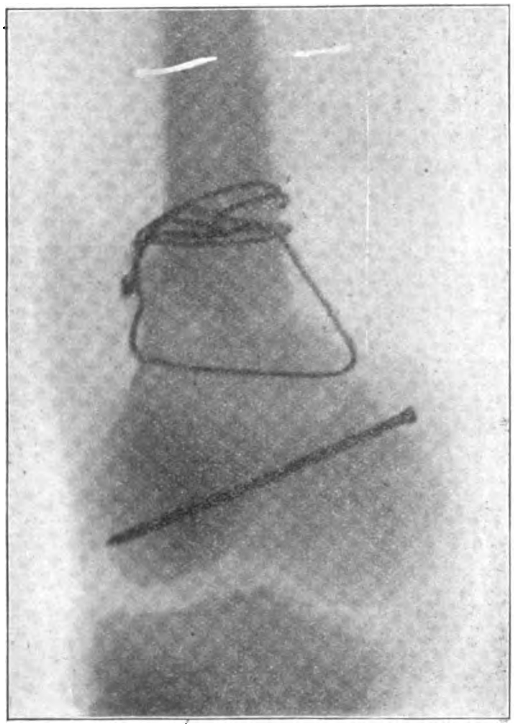
Patient was advised to have an operation for the purpose of wiring the ends of the femur, and ascertaining the extent of the damages to the joint. Accordingly the next day the boy was operated upon by Drs. Sweetser and Aurand.



2. Lateral view taken at the same time as No. 1.

Operation.—An incision about 5 inches long was made on internal side of femur opposite the fracture and extending down parallel with upper edge of patella, and this was then continued transversely to inner edge of the quadriceps extensor tendon. The patella was pushed to outer side, the knee-joint exposed, and lower end of femur bared from above the point of fracture to the lower end of the condyles. This showed a complete fracture extending from about two and one-half inches above the condyles down into the joint with the two fragments freely movable. The leg was flexed, and with assistance of the hospital interne the lower fragments were nailed together with a silver nail and ivory peg, both of which are well shown in the accompanying illustration. The ends of the femur were wired together with heavy silver wire. The capsule was stitched with catgut, the internal lateral ligament was united and wound closed with silk-worm gut sutures.

The wound healed perfectly, and the stitches were removed at the usual time. Patient was discharged from hospital Feb. 20th. From time to time the boy has been given chloroform, and the adhesions broken up. He now has almost perfect use of the knee, except that on account of extensive callus he is unable to completely straighten the leg. This deformity is disappearing slowly. However, the shortening is very slight.


3. Anterior view taken after operation.

This case is reported because of the extensive injury to the knee-joint which could not be repaired other than by operative means.

OSTEOMYELITIS OF HUMERUS

In the Service of Dr. K. Hoegh

Walter Jensen, aged 18, of West Denmark, Wis., was taken on April 30th of this year, with sudden and severe pain in upper part of left humerus. There was at first no swelling, no redness, no heat; but movements in the shoulder-joint were painful. It hurt him to be touched, especially if deep pressure was made. A physician was called in after three days, and high fever was then present. Sometime afterwards swelling appeared, and the doctor, suspecting pus, used an aspirator, but found no pus. The patient was brought to Minneapolis on May 12th, and then exhibited the following symptoms and signs: There was fever with the usual phenomena of thirst, headache, rapid pulse (120), elevation of temperature (103°), occasional interrupting periods of increased heat. There was great weakness and prostration. The patient was pale. looked very feeble, had an anxious facial expression; he could hardly walk from exhaustion, and then only when supported, and for a few steps. He supported the afflicted arm by the sound hand. The arm was swollen from the subclavicular region to the fingers, the swelling being greatest along the humerus, and less pronounced over the forearm and hand. The skin was of normal color except on the posterior aspect of the lower third of upper arm, where it was of a dusky-red color, and showed a minute scar from puncture by the aspirating needle. There was no appreciable increase in the heat of the extremity. In the axilla and down along the inner aspect of the arm deep fluctuation was discovered. Motion of shoulder-joint was exceedingly painful, of the elbow-joint less so.

It was evident from the fluctuation, the pain, and the fever that there was a purulent collection.

As the disease had started with great and deep-seated pain, it must have effected deep-seated structures of a dense nature, that could not expand under the pressure of the hyperemia and the inflammatory exudation. The swelling, which had appeared after the fever and the pain had lasted some days, evidently meant that inflammatory products had escaped from their original deep-seated location; its rapid increase showed that these products were pyogenic.

There could thus be assumed an infective bone disease with subsequent rupture into the soft parts, a secondary phlegmon. Consequently a careful dissection was made in axilla, where pus was found in the deeper layers. It had burrowed up under the pectoralis major backwards to the subscapularis, downwards between the triceps and the coracobrachialis and the biceps, and lower down between the inner head of the triceps and brachialis anticus. The amount of pus was several ounces, its color partly yellow, partly chocolate-colored. An incision over the posterior part of the lower end of humerus was made on the outer aspect, close to the external belly of the triceps, under careful dissection to avoid the radial (musculospiral) nerve. The bone was found denuded of periosteum, roughened, and seemed hyperemic. The inserted finger easily detached periosteum from the anterior surface of the humerus, establishing the continuity of the suppuration on the posterior surface with the pus collection in front. Ten counter punctures were made, and drainage established. No irrigation; a permanent wet dressing was applied, and the arm suspended vertically.

Since the operation the fever has gone down, the pain has diminished, and new counter punctures have been made. If secondary hemorrhage does not take place, the large suppurating cavities will close up; sinuses will remain leading to the bone, and in course of time sequestrotomy will have to be performed.

As the pain started near the shoulder-joint, and as the inner surface of the humerus as well as the lower part of the posterior surface of the diaphysis is denuded of the periosteum, the ultimate necrosis will probably occupy a great part of the shaft.

The diagnosis of rheumatism and neuralgia is often made in such cases. As a correct diagnosis would have led to an early opening, much destruction of soft parts, and the possible invasion of the thrombosed vessels in the axilla might have been avoided.

It has been calculated that osteomyelitis of the humerus takes place in 11 per cent of all cases of osteomyelitis of the long bones. It is thus not infrequent, although far less common than osteomyelitis of tibia and femur.

Dr. Tebbitt, the pathologist at St. Barnabas Hospital, reports that the pus contained cocci which formed themselves in chains. The usual causative agent is, as is well known, staphylococcus pyogenes aureus, rarely albus. The presence of streptococcus makes perhaps the prognosis more grave, especially as to the occurrence of secondary hemorrhage and other complications.

EXTRA-UTERINE PREGNANCY, WITH SYMPTOMS OF APPENDICITIS

In the Service of Dr. Charles B. Wright

The following case of extra-uterine pregnancy is of considerable interest because of the absence of the usual symptoms and signs of pregnancy, due, of course, to the early period of rupture and of the similiarity of the case, in the early stages at least, to a case of catarrhal appendicitis.

The patient, Mrs. G——, aged 21, had been married three years and had had no children. History of two abortions: one, one year, and one two months previously. No history of pelvic inflammatory trouble. Last menstrual period, April 9, 1904, lasted three or four days; no discharge since. Patient said she felt perfectly well until April 25, 1904, when she was awakened about 2 a. m. with severe cramps in the stomach, and vomited.

At 8 a. m. patient was found complaining of severe cramp-like pain in the abdomen. Temp. 98.6°; pulse, 104 on palpation. Some general tenderness, but very tender in epigastrium and right side as low as umbilicus, tongue coated; bowels slightly distended, and had not moved for two days.

At 5 p. m. the patient's condition was decidedly worse. Temp., 100° F.; pulse, 116; extremely tender in the epigastrium and right side; no marked tenderness in either groin; no dulness in the flanks; no bloody discharge.

The patient was strongly advised to be operated upon at this time, but refused. The following morning she felt somewhat better, although her condition was apparently the same.

At 5 p. m. she became suddenly worse; pain, very severe; vomited; patient indicated that her pain was worse in region of McBurney's point, where she was extremely tender, and there was apparently definite muscle-spasm. Pulse, 124; temp., 100° F.; no dullness in the flanks.

She finally consented to go to the hospital for operation. At 8 p. m. the pain was somewhat relieved, but her general condition was much worse; pulse, 134; decided pallor; dulness in both flanks; no vaginal discharge; pelvic organs apparently normal; some tenderness on both sides, but not more so than was general above.

Operation was unavoidably postponed until the following morning, when the patient's pulse was 150; respiration rapid; dulness had extended high up in both flanks. Hemoglobin, 50 per cent; leucocytes, 22,000. Hemoglobin was estimated by paper method, and was undoubtedly too high; it could not have been more than 15 or 20 per cent, as the patient was almost bloodless.

The abdomen was opened by Dr. Hunter at 10 a. m. under light anesthetic through a right inguinal incision. The abdomen was filled with dark blood and clots; and in the uterine end of the right tube was found a perforation about the size of a lead pencil, from which a small amount of bright red blood was oozing. The uterine appendages were otherwise normal, and the appendix was normal.

The tube was excized; the abdomen was thoroughly washed out with salt solution and closed; recovery was uneventful. (The pathological specimen is very interesting, and a full report will follow later.)

NORTHWESTERN HOSPITAL

MINNEAPOLIS

BRAIN ABSCESS—OPERATION

In the Service of Dr. W. A. Jones

F. B.——, male, aged 35. Family and personal history negative, except one brother died at 40 of septic endocarditis about March 10, 1904.

Patient was in his usual good health until March 7, when an otitis media developed in the left ear. The ear-drum perforated in four days without surgical assistance. He was then seen by a local aurist March 12, who advised him to seek other advice. On March 15 he went to St. Paul and was under the care of a specialist, who, after treating him for one week, operated for mastoid abscess. The operation was thoroughly and carefully performed, and the wound packed in the usual manner.

During the latter part of April a tonsillitis developed; cultures showed a streptococcic infection. A few diphtheria bacilli were found, and as there was a new membrane formed over the tonsils and over the mastoid wound, the patient was sent to the detention hospital, where he remained ten days.

The discharge from the wound increased and showed streptococci.

He was brought over to Minneapolis May 12, and placed under the care of Dr. C. J. Spratt.

At this time the patient was somewhat aphasic although his general condition was good; his temperature was slightly elevated, varying from 99° to 100°. The pulse was normal. His sleep was restless and broken, and he was irritable. The asphasia grew more pronounced, and on the 15th of May he vomited, not however projectile in character. Again on the 18th he vomited, and his right arm became tremulous and paretic. In the evening the paresis involved his right leg, and he was anesthetic on this right side. His pulse dropped to 60, and he became stuperous on the following day. The pupils were normal.

I saw the patient for the first time on May 20, found him comatose, with hemiplegia and rigidity of the right side. His temperature was 99.6° and his pulse 60. Frequent examinations of the discharge from the wound showed streptococci and no diphtheria bacilli. A diagnosis of abscess of the left temporal lobe was made, and an operation advised with the understanding that it was to be considered a last resort. The operation was performed at noon on the same day by Dr. J. H. Dunn, assisted by Dr. C. J. Spratt and Dr. H. W. Jones. A large osteopathic flap was removed by small trephine and wire saws from the left temporoparietal region. There was considerable hemorrhage, and, on elevating the bone, the brain protruded. The dura was incised, and an exploring needle introduced downward and backward. Pus appeared immediately. The incision was enlarged, and a mass of broken-down brain substance poured out. Investigation disclosed a large cavity the size of an ordinary egg surrounded by apparently healthy brain tissue. Drainage tubes were introduced, and the wound closed. Smears were made of the pus by Dr. Wesbrook of the State University, and found to contain streptococci in abundance. A culture the following day showed streptococci, a large number of phagocytes containing the streptococci.

The patient did not regain consciousness, but the rigidity and, to some degree, the hemiplegia of the left side disappeared. He died the night following, thirty-three hours after the operation. There was no autopsy.

The case suggests the necessity of proper attention to abscesses of the middle ear, and the dangers of infection.

FAIRVIEW HOSPITAL

CLOQUET, MINN.

FRACTURE OF SPINOUS PROCESS 8TH DORSAL VERTEBRA WITH PARTIAL DISLOCATION OF VERTEBRA

In the Service of Dr. Charles D. Harrington

Patient, O. N. B——, male, aged 34, weight about 150 lb. On April 7, 1903, at 6:30 a. m., while sitting on a plank mending a belt in a sawmill, a belt tightener heavily loaded with weights and weighing over 1,000 lb. fell a distance of about four feet striking him back of the neck square on the shoulders. This heavy weight bent him over, closing him up like a jack-knife and had to be taken off before they could move him. When seen complained of pain in back, unable to stand or sit up. Examination showed 8th dorsal vertebra partially dislocated forward, and spinous process absent. The spinous process was located a little to the right of the median line, and separated from the vertebra. There was some contusion about the shoulders and thighs; sensation was normal over the entire body; no paralysis, except that he was unable to void urine, showing that the cord was not injured.

Patient was given ¼ gr. morphia hypodermatically, which was enough to control the pain, and he was placed in a hospital bed on a hard, straight mattress, and kept on his back. He was unable to urinate, and had to be catheterized, but at the end of 27 hours, he was able to void urine without help. The temperature in the afternoon was 100.5°; the pulse, 80.

April 8th, temp., a. m., 100.5°; 6 p. m., 102°; pulse 80. 10 p. m., temp., 99.8°; pulse, 84.

April 9th. 11:30 a. m., temp., 99.5°; pulse, 76.

April 10th. 11 a. m., temp., 99°; pulse, 70.

April 11th. 4 p. m., temp., 99.2°; pulse, 62.

Temperature became normal on the fourth day, and staid normal. The pulse was subnormal most of the time. In the afternoon of the third day after the injury the bowels moved; two comp. carth. pills were given the night before.

Eight weeks after the injury he left the hospital, able to walk by using a cane. Three and one-half months after the injury he began to do light work. July 29, 1903, tender over 8th dorsal vertebra, and some pain in left groin, tires easily.

Jan. 18th, 1904. Doing full day's work, some prominence in region of 8th dorsal vertebra, slight pain at times radiating on either side of injured vertebra.

CLINICAL MICROSCOPY

DIFFERENTIAL DIAGNOSIS OF PYELITIS AND CYSTITIS

No more troublesome or perplexing problem confronts the diagnostician in diseases of the urinary tract than the determination of the source of pus when present in the urine. Catheterization of the ureters and cystoscopic examinations have done much to simplify the problem, and yet these are procedures which, under ordinary circumstances, one hesitates to advise so long as the knowledge can be obtained by less painful means.

Lenharz (Clinical Microscopy and Chemistry, pages 366-369) gives a splendid resume of the points in differential diagnosis between cystitis and pyelitis. He lays stress first upon having the urine fresh for examination. A non-acid urine does not belong to an uncomplicated pyelitis. In gonorrheal tubercular and stone cystitis the urine may be acid, but if the urine is alkaline uncomplicated pyelitis can be ruled out.

The arrangement of the pus cells is of no importance, but the form in which the cells appear gives valuable evidence. If the leucocytes look ragged and irregular, as if fixed in ameboid movement, the source of the pus is the pelvis of the kidney. The finding of normal rounded, smooth cells speaks for cystitis, although not absolutely excluding pyelitis. The appearance of the red-blood cells when present in the urine is also an aid. When coming from the bladder the erythrocytes, as a rule, are well preserved, and have their normal color, while if the disease is in the pelvis of the kidney the red cells are partially or entirely "washed out," and are distorted in shape.

He also lays stress upon finding a few round, distinctly nucleated epithelial cells imbedded in a clump of leucocytes as evidence of pelvic disease.

Of all the criteria the most important is the ratio of the albumin content to the amount of pus. In cystitis, even with maximal amounts of pus, the albumin content is never more than 0.1 to 0.15 per cent. In pyelitis, even with a small amount of pus, the albumin content will be as great as 0.15 per cent, and where the pus is present in large amounts will be as high as 0.3 per cent.

The writer would like further to add that in pyelitis the pus cells are usually found in the urine unmixed with many epithelial cells, that is, the exudate is pure pus, and, further, in the majority of the cases of pyelitis the nuclei of most of the leucocytes show plainly, while in cystitis nucleated pus cells are the exception, or are seen only in small numbers in the urine.

In this connection it is important not to draw too hasty conclusions from one examination. Repeated examinations over some weeks of time, the urine being secured from the patient at different times in the day, are of the greatest importance, and will help materially in coming to a right conclusion. One should never forget that frequent micturition with a small number of pus cells in the urine is often the first evidence of renal tuberculosis.

CYTO-DIAGNOSIS

It is important from a diagnostic standpoint to examine microscopically all exudates withdrawn by aspiration from the pleural, peritoneal, or spinal cavities. The cellular elements present will sometimes give a clue to the diagnosis, and occasionally establish it when all other clinical findings fail to do so. Quincke believed that normal endothelial cells did not contain glycogen, and that a marked iodine reaction in endothelial cells was suggestive of carcinoma. Wolff subsequently refuted this statement, and cited two instances where a glycogen reaction was present in endothelial cells, although no cancer was found at autopsy.

A new impetus was given to the microscopical study of exudates by Rieder, who demonstrated that in non-malignant exudates mitotic figures are not seen in the cells, while in malignant disease the exudates contain many cells showing a typical mitosis. Dock corroborated Rieder's findings in cases observed by him.

In the serous and tubercular exudates which he studied mitotic and amitotic figures within the cells were rare. The majority of the cells were multinuclear leucocytes, while a smaller number were small round mononuclear cells (lymphocytes). In effusions from cancer more cells showed mitosis than in effusions from simple or tubercular inflammations.

Gwyn (Am. Jour. Med. Sci., April, 1904), in a report upon carcinoma of the abdominal cavity, takes occasion to review his findings in cytodiagnosis of effusions and exudates. In his cases of tubercular pleurisy a preponderance of lymphocyte cells was seen, and also large mononuclear endothelial cells in small numbers. In exudates due to streptococci, pneumococci, or typhoid bacilli, the polymorphonuclear leucocytes were found in excess of the other varieties. The prevailing cells in the fluid from spinal puncture where no microörganisms could be demonstrated were the lymphocyte cells. He concludes that in exudates where many of the cells show mitotic figures cancer is to be suspected, but the absence of mitotic figures does not exclude carcinoma.

Small round mononucleated cells grouped in masses suggest malignancy. Large endothelial cells with many nuclei are common in exudates from malignant disease, but are seen in other conditions.

Gwyn cites a case of intermittent diarrhea with bloody discharge where the presence of many mononuclear or multinuclear epitheloid cells with cell inclusions suggested the diagnosis of malignant disease of the bowel. The diagnosis was subsequently verified by autopsy. In a case of tumor of the lung the diagnosis was suggested by the finding of large numbers of oval or round lymphoid cells with single nuclei in the sputum.

George Douglas Head, M. D.

NORTHWESTERN LANCET

A SEMIMONTHLY MEDICAL JOURNAL

The Official Organ of the Hennepin County Medical Society

W. A. JONES, M. D..................EDITOR

Editorial Office, 515 Pillsbury Building

W. L. KLEIN, PUBLISHER

SUBSCRIPTION, $2.00 A YEAR.

839-840 Lumber Exchange......................Minneapolis

JUNE 1, 1904

STATE MEDICAL SOCIETY

Remember that the House of Delegates meets on Wednesday, June 1, and that the scientific sections meet on Thursday and Friday, June 2d and 3d.

Be prompt, attend all the meetings, and discuss the business and papers.

Clinics will be held at the different hospitals. The program is already in the hands of the committee, and plenty of material is assured.

Do not forget the social side of the doctor's life at Elk's Hall, Friday evening.

UNSECTARIAN MEDICAL SOCIETIES

At the May meeting of the Henenpin County Medical Society the subject of the admission of homeopaths was discussed. The general sentiment was decidedly favorable to the admission of licensed practitioners who will subscribe to the new constitution, which admits physicians to the ranks of the A. M. A. who practice non-sectarian medicine. The regulars have thrown down the bars in order that the term *physician* shall be universal in its application. How far this will apply must depend upon the attitude of other schools of medicine. How many homeopaths will join the A. M. A. through the county and state societies is a question for them to determine. Does it mean that a homeopath to become a member of a non-sectarian organization shall renounce his own medical societies, and give up the teaching of homeopathic principles? Shall the physician who teaches the law of Hahnemann be excluded from our societies simply because he clings to his ancient faith? Can we admit him under the circumstances, and will he come in if permitted? These questions can only be settled by a conference between the two schools.

The aim of all physicians is to heal the sick. Why divide the principles by a stone wall? The wall is already crumbling, and eventually must disappear, and the two fields of medicine will form a greater expanse, and become one.

Doubtless many sectarian societies will be governed by the older members of the profession, and the union must be effected by the younger and more progressive men. The time is coming when fewer medical colleges will exist; and those that survive will be found in the large cities where clinical advantages are adequate. Teaching chairs will be added to embrace all recognized systems of therapeutics, and thus the necessity of sectarian schools will cease to exist. Perhaps the homeopaths have already discussed the problem, and THE LANCET will be glad to publish their views on the subject. There are many excellent men in Minneapolis who call themselves homeopaths who would be warmly welcomed in the Hennepin County Medical Society.

PROFESSIONAL ABUSES

The article by Dr. J. H. James on "Medical Graft" in this issue of THE LANCET may stimulate a return of the normal conscience among the backsliders in the profession—some of them at least; in others the prick will be but momentary, and their graft will go on. Among the majority of physicians the views of the writer will strike a harmonious cord. Surely, the larger number are in no sense grafters; neither is grafting limited to the profession in large cities, for the man in the country who solicits a bribe is equally a grafter.

The strongest arguments against this pernicious system is its dishonesty, and the demoralizing influence upon an otherwise upright profession.

The whole subject has been threshed over in the medical press until the lesson would seemingly have impressed itself strongly and deeply enough to eradicate the vicious practice, yet it goes on—sometimes secretly by the payment of a part of the fee behind closed doors, sometimes in the guise of a business transaction. Surgeons have undoubtedly mailed checks of considerable amounts to the man who sent the case to the consultant. Such checks have been exhibited by over-enthusiastic receivers. The practice has grown like other toad-stool fungi until in many quarters it has become an expected transaction.

A man who will receive or pay money that is recognized as graft will be dishonest in other professional acts: he will exaggerate or willfully make a wrong diagnosis, operate when it is unnecessary or unjustifiable, treat patients by a system of over-dosing or by frightening his victim when sound advice is all that is needed. The practice cannot be too strongly condemned. The younger man who is starting his professional career should be encouraged to discountenance any dishonest means and in every way uphold the ethics of a gentleman. Fortunately, there are in the profession a majority who are honorable in their dealings with associates and patients. These are the men who ultimately make a success of their work, who elevate the whole profession by their example and their courage to do right, and who openly transact their business, and maintain a professional attitude toward their fellowmen.

It is to be hoped the House of Delegates will add their sanction and emphasize their views upon the section of the code which distinctly says that false compensation is dishonest.

Let us also hope that the "contract physician" will come in for a large share of criticism, and that the system prevailing so extensively among the lodges will be frowned down and placed on a similar plane with the grafter. Any measure that will uplift medical ethics and ethical compensation will be welcomed by the entire profession. Let the people feel that the medical profession is honorable in all of its dealings, and mutual confidence will prevail.

That smallpox may be conveyed by the air, according to competent authorities, has been demonstrated upon many occasions.—Editorial in Medical Record.

REPORTS OF SOCIETIES

HENNEPIN COUNTY MEDICAL SOCIETY

DR. F. A. KNIGHTS, SECRETARY

A stated meeting of the Hennepin County Medical Society was held May 2d, Dr. C. H. Hunter, president, in the chair, and fifty-five members present.

The Censors reported favorably upon the names of Dr. John Watson, Dr. J. W. Mintiner, Dr. F. Laws, Dr. C. W. Hack, and Dr. A. J. Murdock, and ballot being taken they were all declared elected to membership.

Dr. F. F. Wesbrook spoke briefly in the interest of the Anti-tuberculosis Committee, requesting members of the society to report tuberculosis cases to the City Health Commissioner that the committee might get facts from the records.

On motion of Dr. R. J. Hill, Dr. Tyson, of Philadelphia, was elected an honorary member of this Society.

Dr. R. J. Hill for the Board of Censors spoke briefly, requesting instructions as to receiving applications of homeopaths for membership provided they agree to practice non-sectarian medicine. Dr. A. W. Abbott moved that the Censors be instructed to consider such applications. This motion received a second, and after discussion, prevailed.

Dr. G. D. Head, librarian, anounced that Dr. W. H. Leonard had donated to the library 200 volumes from his own library. A vote of thanks was taken, which the secretary was instructed to transmit to Dr. Leonard.

Dr. H. L. Staples announced that preparations for entertainment of the State Medical Society had been made, the Elks' Hall having been secured for the meeting, and social entertainment provided for Friday evening, June 3d.

Dr. L. A. Nippert, for the Milk Commission, presented the request of Jno. B. Irwin that the milk from his dairy be certified. After discussion the matter was, on motion, referred back to the Milk Commission for investigation, and report at the next meeting.

Dr. E. J. Brown moved the adoption of the following resolution:

Whereas, the medical profession, in common with other professions and lines of business, is being canvassed in the interest of a so-called Friends of Labor Directory, purporting to be a classified list of professional and other men who are friendly to organized labor, such friendliness being passed upon by a committee appointed for the purpose by some labor organization, and such "friends of labor" being required to subscribe the sum of two dollars for the purchase of said books; and,

Whereas, such a scheme is evidently vicious and in effect a species of blackmail, whatever the intention of the promoters may be; therefore, be it

Resolved, that the Hennepin County Medical Society declares its belief that such a scheme is wholly and unqualifiedly vicious, both on the part of its promoters and of any persons who hope to secure business from the laboring people by having their names in the proposed directory.

The same was adopted by the Society.

Dr. W. E. Rochford reported a case of primary sarcoma of the omentum, with specimen.

Dr. A. E. Benjamin presented specimens of dermoid cyst, with carcinomatous degeneration, and also of uterine fibroid.

Dr. J. Clark Stewart reported a case of aneurysmal varix of forearm, with before and after photos.

Dr. J. W. Little reported a prostatectomy showing a peculiar growth closing the urethra.

Dr. A. W. Abbott read a paper entitled "Treatment of the Early Stage of Pelvic Inflammation, with some Points in Diagnosis." Drs. Rochford, Wright, Benjamin, Little, and Rees participated in the discussion, which was closed by Dr. Abbott.

Dr. Head's paper on "Chronic Adherent Pericarditis" was postponed for lack of time.

Association and fellowship of medical men promotes broad-mindedness, liberality, ability to render proper recognition; it encourages study and investigation, lifts from the rut of self-conceit, and stimulates to renewed activity.

BOOK NOTICES

VETERINARY STUDIES FOR AGRICULTURAL STUDENTS. By M. H. Reynolds, B. S. A., D. V. M., M. D., Professor of Veterinary Medicine, University of Minnesota. Published by the Author, St. Anthony Park, Minn.

Dr. Reynolds tells us that he wrote this work to meet the needs of his own students, who come to his classes with little or no technical training, and, it goes without saying, with little acquired capacity for the mental work required in the study of medicine. It is this quality of the work that will make the book valuable to all farmers and stockmen, for its information is within their easy grasp. Dr. Reynolds brings to his work ripe scholarship and practical knowledge, and he has made a book that every farmer—particularly every farmer-boy—should possess; and medical men who practice in the country will be doing a valuable service by recommending the volume to every man who has to care for stock.

A TEXT-BOOK OF THE PRACTICE OF MEDICINE. By James M. Anders, M. D., Ph. D., LL. D., Professor of the Practice of Medicine and of Clinical Medicine, Medico-Chirurgical College, Philadelphia. Sixth Edition, Thoroughly Revised. Handsome octavo volume of 1,300 pages, fully illustrated. Philadelphia, New York, London: W. B. Saunders & Company, 1903. Cloth, $5.50 net; Sheep or Half Morocco, $6.50 net.

Ander's Practice is one of the best of the one-volume works on this subject. The author's object evidently is to make his book of practical value as a text-book, rather than to give much space to discussion of the unsettled and immaterial though interesting, features of disease.

Diagnosis and treatment are given particular prominence, a feature of the latter being the use of numerous formulæ. The tables of differential diagnosis are good.

In this, the sixth edition, recent developments in the knowledge of dysentery, malaria, cholecystitis, yellow fever, and the newer parasitic diseases are noted. The article on the etiology of malarial fever is of especial excellence. Newer subjects, such as "Paratyphoid," "The Fourth Disease," and "Adiposis Dolorosa," are treated under separate sections.

If objection could be made to any feature, it is the placing of the discussions on pathology before etiology of each subject. There are reasons beside that of usage why etiology should precede.

NEWS ITEMS

Dr. E. G. Ireland, of Montana, has located in Williston, N. D.

Dr. R. C. Faust, of Amigo, has located in Homestead, S. D.

Dr. C. W. Riches, of Willmar, will move to Anoka next month.

Dr. L. H. Hauman, of Lidgerwood, N. D., has moved to Bristol, S. D.

The Observer of Des Lacs, S. D., says that place needs a physician.

Dr. A. S. Rider, of Donaldson, Iowa, has located at Flandreau, S. D.

Dr. Herbert W. Piper has moved from Courtenay, N. D., to Cathay, N. D.

Dr. H. J. Seeman has moved from Baltic, S. D., to Rockham, in the same state.

Dr. J. H. Van Dyke, who has been practicing a short time at Ashby, has moved to Chicago.

Dr. Adolph E. Voges, a recent graduate of the State University, has located at Good Thunder.

Dr. M. L. Shanks, of Casselton, N. D., died last month. He had practiced in Casselton since 1878.

Dr. H. A. Halgren, of Watertown, was married last month to Miss Elsie Belden, of Montrose.

Dr. Frank R. Sedgeley, of Boston, has begun work in the State Asylum at Fergus Falls, taking the place of Dr. Dolman.

Dr. L. W. Meckstroth, of Wahpeton, N. D., who has been spending some weeks in special study, has resumed his practice.

Dr. E. D. Spear, who has spent some months as an assistant in the Hankinson (N. D.) Hospital, has located at Nome, in that state.

Dr. Henry H. Critchfield, of Hunter, N. D., died last month in Minneapolis. Dr. Critchfield had practiced seventeen years at Hunter.

Dr. L. S. Crandall, a pioneer physician of Redwood county, died last month at Lamberton. Dr. Crandall moved west from New York in 1846.

Dr. George W. Brooks, of Hannah, N. D., has moved to Langdon, in the same state, and formed a partnership with Dr. E. I. Donovan.

The Catholic Sisters of Deadwood, S. D., have made plans for an adition to St. Joseph's Hospital of that city which will double its capacity.

Dr. John C. Catlin, who was formerly of Delano, but has been practicing in the N. P. Hospital, at Missoula, Montana, has returned to Delano.

Dr. D. C. Cowles, of this city, severely injured his thumb while using a glass tube containing antitoxin. The tube broke and entered the flesh of the thumb.

Dr. Josephine S. Lindstrom, who has been practicing for several months with Dr. Westeen, of Grand Forks, N. D., has returned to Oberon, N. D., and resumed practice.

Dr. Joseph D. Titcomb, of Duluth, died last month of pneumonia at the age of 45. Dr. Titcomb formerly practiced in Montevideo. He practiced in Duluth about fourteen years.

Dr. W. R. Murray, of this city, has been made an associate editor of the Annals of Ophthalmology, which is edited by Dr. H. V. Würdemann, of Milwaukee, and published at St. Louis.

Dr. C. A. Wheaton, of St. Paul, was elected president of the Nu Sigma Nu, which held its thirteenth biannual meeting in St. Louis last month. Twenty-two chapters were represented.

The Waseca County Medical Society was organized last month with the following officers: President, Dr. Cummings; vice-president, Dr. Zatcheller; secretary and treasurer, Dr. Lynn; delegate, Dr. Cummings.

The Fillmore and Houston County Medical Association was organized last month. Dr. Brown, of Caledonia, was elected president; Dr. Grinnell, of Preston, vice-president, and Dr. Drake, of Lanesboro, secretary.

Dr. J. W. Daniels, formerly of St. Peter, died in California last month, at the age of 77. Dr. Daniels began practice in Faribault in the 50's, and was a surgeon in the Civil War. He was a firm friend of the Indians, and was an Indian commissioner for nearly twenty years.

Dr. C. A. Houston, whose heroic and self-sacrificing work in the epidemic of diphtheria at Grand Marais last winter almost cost him his life, has been in Minneapolis for some time for the benefit of his health. Dr. Houston, who has honored the profession of medicine, is a graduate of the State University, class of '01.

At the annual election of officers of the Minneapolis Medical Club, held last month, the following officers were chosen for the next year: President, Dr. W. M. Chowning; vice-president, Dr. R. E. Farr; secretary, Dr. W. H. Aurand; treasurer, Dr. Q. A. Olson; committee of censors, Dr. H. L. Ulrich, Dr. J. C. Litzenberg, and Dr. Fred Erb. The Club adjourned for the summer, to meet again in September.

NORTHWESTERN LANCET

A Semimonthly Medical Journal

VOL. XXIV · JUNE 15, 1904 No. 12

THE PROPHYLAXIS OF OPHTHALMIA NEONATORUM

By George H. Thomas, A. M., M. D.

Oculist to Asbury Hospital

MINNEAPOLIS

That "an ounce of prevention is worth a pound of cure" has been amply illustrated by many methods we now employ to prevent disease. It is not possible to estimate the benefit vaccination has been to humanity in the last one hundred years by the effect it has had in reducing the spread and mortality of small-pox, a disease which was once the most destructive scourge to mankind. In a like manner the immunization treatment against diphtheria and rabies, and the control we have over yellow fever, have robbed these once dreaded diseases of most of their possible virulence. Such results together with those obtained from improved sanitation, and the hygienic and quarantine requirements of medical health officers, have made the subject of the prophylaxis of disease one of the most important and valuable in scientific medicine. No less pronounced in its benefits, as I hope it will be believed, and hardly less effective is the prophylaxis of ophthalmia neonatorum.

Ophthalmia neonatorum is a conjunctival inflammation caused by infection from the mother during the delivery of her offspring. The disease, as thus defined, depends upon the condition of the mother or her surroundings at the very time of birth. Similar types of conjunctivitis of any other than this peculiar etiology and coming on subsequent to the lying-in period are not properly included under this title, though the causative germ of infection and the appearance of the disease may be identical.

Although thus restricted to this unique etiology, it is, nevertheless, a very common disease and one which has been and is still capable of being most disastrous in its effects. How far this is so may be realized from the following statements made by various statistical writers on the subject. For example: Magnus, of Breslau, reports that nearly 72 per cent of all who become blind during the first year of life are rendered so by ophthalmia neonatorum. The "Royal Commission of the Blind," in its report made ten years ago, estimated that 30 per cent of all blind people in the United Kingdom were made so by this disease; and Riviére in France, and Howe in New York State have confirmed the above reports by their investigations. Magnus further declares that of ten thousand children under five years of age 421 (or 4 per cent) are rendered blind by this type of conjunctivitis. The disease, however, is more commonly met with than these figures would indicate, for a comparatively small percentage of children who have the infection become blind. For instance: Howe, of Buffalo, found that in 8,574 consecutive cases of childbirth 8.66 per cent (or 736) of the infants had this disease. Without mentioning more figures, it will be enough to say, that in many maternity-hospital reports of Europe, a percentage has been given almost equal. These figures make evident the importance of the prophylaxis of ophthalmia neonatorum. Every practicing physician should be familiar with it, and should be as careful to employ it as he is to prevent dangerous post-partum hemorrhages, subinvolution, or septicemia.

The clinical aspect of ophthalmia neonatorum in all its details is so variable, according to the degree and extent of the inflammation, that a description of all the appearances and pathological changes it may present would be so involved with technical special terms and fine distinctions, that it would be of interest only to the specialist for prognostic information, and, therefore, would be out of place in this article. It is sufficient to describe it as an acute inflammation of the conjunctiva with the four cardinal symptoms, to which are added those of mucopurulent discharge, lachrymation, and intolerance of light. Chief among these symptoms is the purulent discharge, which appears early and which is pathognomonic. So long as this inflammation is limited to the conjunctival epithelium, there is no particular danger of blindness; but once the cornea becomes involved, as it frequently is, especially in severe, prolonged, and improperly treated cases, impairment of vision or total blindness is almost certain to follow from opaque connective-tissue scars or from destruction of the transparent tissues. Still more serious complications may arise if the cornea becomes perforated, and the infectious germs are thus enabled to reach the deeper parts of the eye. In no case is the cornea safe from an involvement that may lead to impaired vision or incurable blindness.

Since the discovery of the gonococcus in the blenorrheal discharge from the eyes of infants affected with this disease by Neisser in 1879, and a little later by Haab and Sattler, this germ has been generally regarded as the causative element. Other investigators have failed sometimes to find the gonococcus, but have found instead the pneumococcus, the colon-bacillus, the streptococcus, the staphylococcus, and the Klebs-Loefler bacillus; and therefore have thrown some doubt upon the theory that the disease is always gonorrheal in origin. Hausman claimed that even the ordinary natural lochial discharge might cause a mild ophthalmia. But Crédé and others later have maintained that a true blenorrheal inflammation from healthy lochia is impossible. Without a bacterial examination it is never possible to say whether a given case of ophthalmia neonatorum is due to the gonococcus or not; clinically it is perhaps impossible to know; but, owing to the frequency with which this germ is found in the discharge, when proper means are taken to find it, as compared with other pathogenic bacteria, it may be looked upon as the etiological factor,—at least in the great majority of cases.

The source of this gonococcus infection is undoubtedly almost always from the mother, even though no history of the disease is obtainable, or though there have been no symptoms of it for years. It is notoriously difficult to obtain a history of gonorrhea in a woman; many have had the disease without knowing it; and it is a well known fact that the germ, though dormant for years, may regain its virulence from a favoring influence the pregnant state produces in the vaginal mucous membrane. It is also possible that the germ, hidden away in some secluded recess which is opened up during the delivery of the child, is let loose; and finds a favorable soil in the tender and susceptible infant's eyes. Though this may be the source in most cases, it should not be forgotten that the eyes may be infected by the nurse or other attendant; and that the surroundings of the child immediately after birth may be responsible for an infection not gonorrheal.

Owing to the impossibility or at least impracticability of determining whether such infection is likely to take place at the birth of any child, owing to the fact that the eyes of infants are very susceptible to infective inflammations,—just as their skin is to eczema,—and, finally, owing to the fact that ophthalmia neonatorum is such a common and dangerous disease, any safe means which we can always employ to prevent its occurrence should be looked upon as not only wise but obligatory. If there are any measures we can take to prevent the possibility of incurable blindness, with its consequent invalidism and dependence, no practicing physician should be guilty of neglecting it. And yet, in spite of all that is said above, and in spite of the fact that this subject of prophylaxis has been long a very hackneyed one, I venture to declare that in this country it is not used in half the cases of childbirth, even where a physician is in attendance. That this can be so when the prophylactic treatment is so simple, so harmless, and so effective can be due only to indifference or ignorance. That neither of these can be the cause of the neglect, I think the subject cannot be too often brought to the minds of medical men. My own observations on the subject have made me a strong advocate of the coercing influence of the law, rather than the milder admonition of a "journal" article, which appears so often that it is rarely read.

Many views are held as to the most efficient and least possibly harmful way to prevent the occurrence of ophthalmia neonatorum. To Bischoff of Basel belongs the credit of first introducing a systematic method of treatment for the prevention of this disease. He washed out the vagina before delivery with a solution of carbolic acid, and instilled into the baby's eyes a few drops of a solution of salicylic acid. The use, however, of ante-partum intravaginal antiseptic douches of all kinds have now become deservedly unpopular. They make the mucous membrane dry and thereby retard the delivery, which is enough to condemn their use, for the longer the child's head remains exposed to the vaginal secretions the greater the chance of the eyes becoming infected. Furthermore, it has been found by many investigators that vaginal douches, such as are commonly employed in obstetric practice, are rarely if ever effective in destroying all the intravaginal bacteria. There are, however, much simpler and far more efficient means.

Though the value of solutions of silver nitrate had long been known in the treatment of gonorrheal and other blenorrheal inflammations of the conjunctiva, its use as a prophylactic against ophthalmia neonatorum was never employed until twenty years ago by Crédé of Leipsig. His routine has always been to wipe the child's eyes carefully with a clean towel wet with some mild antiseptic immediately after delivery, and then to instill one or two drops of a two per cent solution of nitrate of silver. This was often done before even the cord was cut. If there was good reason to fear infection from a suspicion of gonorrhea in the parent, a second instillation was made on the next day. As a result of this simple procedure the number of cases of ophthalmia became reduced in Crédé's practice from ten per cent to less than half of one per cent. In all the larger maternity hospitals of Europe and America, where this method has now become in most the rule, the same success has been attained. In New York and in Boston, to my personal knowledge, where several thousand children are born a year with dispensary physicians in attendance, and where the Crédé method in some modified form is absolutely required, the percentage of cases of this disease is less than one per cent,—in spite of the squalid and unhealthy surroundings. The attending physician blames himself somehow, if ophthalmia ever does develop.

Much has been said against this use of silver nitrate. It is claimed by some that it is itself liable to set up a hyperemia of the conjunctiva, thus rendering it more susceptible to infection. There is small proof of this, however; and in the hands of those who have had the greatest experience with the nitrate of silver in this way there has been no harm reported. On the contrary, they claim that no harm is ever possible to come from its use. The important discoveries of late years of certain organic compounds of silver such as protargol, argonin, and largol, should put to an end even these objections, for they are comparatively unirritating and reasonably efficient. An obstetric bag should be no more without one of these solutions for the baby's eyes, than it should be without some antiseptic for sterilizing the hands.

But the instillation of a few drops of any of these collyria is not all that should be done to make the prophylactic treatment complete. Though these solutions may destroy any germs that have found their way into the conjunctival sac during birth, they can have no effect in destroying bacteria which may be left on the child's skin, particularly of the lids, face, and hands, from which infection may subsequently be carried to the eyes. It is important, therefore, when the infant receives its first bath, that the face and hands are carefully washed and then wiped with a towel wet in some mild antiseptic. The face should be carefully cleaned first, and never dried with a towel that has been used before on the body. In view of the fact that an ophthalmia may be set up by infection carried from the face and hands, it seems more reasonable to apply the drops in the eye after the completion of the bath and the sterilization of the skin around the eye, instead of before this time, as it is generally used and as recommended by Crédé and his followers.

The Ophthalmological Society of Great Britain in consequence of the great danger of ophthalmia neonatorum, and the well known want of care in its prophylaxis shown by many doctors and nearly all midwives, have recommended that more attention to this disease should be made a legal requirement. Much has been written about legislative enactments to control the occurrence and proper care of these cases; but nothing definite has been done and probably never can be. But the prophylaxis of ophthalmia neonatorum is slowly becoming a practice so generally used, and the laity is being made acquainted with its value to such an extent, that doctors who do not employ it are in constant danger of malpractice proceedings against them. In view of the effect of the prophylactic treatment of this disease, to have a case of ophthalmia neonatorum not only suggests a want of care on the part of the attendant, but also endangers his reputation should the disease result in visual impairment or blindness.

NON-VALVULAR HEART-SOUNDS*

By J. G. Cross, M. S., M. D.

MINNEAPOLIS

IN TWO PARTS—PART II.

Depending upon a probable degeneration of heart-muscle as its cause, the adventitious sound described by Hare[19] is somewhat related to the foregoing. It is a peculiar systolic "ching," resembling the rubbing together of starched cuffs, heard best on a line from one inch to the right of the sternum to one inch to the left of the nipple. He finds it frequent in beginning phthisis, and in the presence of a feeble and irritable heart, and ascribes it to vibration in the chordæ tendineæ, produced by imperfect contraction of their muscular attachments.

In most cases in which an impure heart-tone is made out, it depends upon a muscular change in the heart, or a slight roughness or rigidity of a valve. As noted by Sahli[4], some of these impure tones are really valve defects too slight in degree to cause the characteristic murmur; and under these conditions may be considered rudimentary murmurs, as is shown by the fact that when the heart's action is increased the impurity is supplanted by a genuine murmur. An impure heart tone is occasionally heard in healthy people.

Reduplication of the first or second tone over the heart is caused by different degrees of blood-pressure upon the valves, the tension on one valve becoming great enough to produce vibration sooner than on the other. Reduplication of the second sound occurs more commonly.

Phear[2'], in the observation of 109 cases of reduplication of the first sound of the heart, found it oftenest with valvular lesions, especially mitral regurgitation; in patients with increased arterial tension, especially nephritis, in anemia, and in dyspepsia. Leube[2] says of impure heart-tones and reduplicated heart-sounds that it is wrong to put high value, or to build a diagnosis at all, on them. The demonstration of an impure tone, he remarks, is "a comforting sedative to the diagnostic conscience because (since these abnormal sounds occur in both health and disease of the heart), whether dissection shows anything pathological on the valve apparatus or not, the clinical finding will not be discredited."

Anomalies of anatomical structure in the heart may produce accidental heart-sounds, but not necessarily. An open foramen ovale or septum defect usually gives rise to a loud systolic bruit heard throughout the whole heart area, but particularly over the base. Babcock[21] says it does not appear to be limited to any area, but that there is nothing distinctive about the murmur itself. Diverticula of the heart have been found in the new-born, and intertrabecular defects sometimes occur in which murmurs may arise under favoring conditions. A musical systolic murmur heard at the apex has been accounted for by a button-hole-like fenestration of a mitral segment. Babcock and others describe aberrant fibrous bands or cords stretching across between two different points on the ventricular wall; the vibration set up in these by blood currents may cause a murmur. Other observers have attributed certain accidental murmurs to abnormalities in the chordæ tendineæ and their attached muscles.

Diastolic murmurs of non-valvular origin are comparatively rare, and by many writers their existence has been denied. Sahli and Leube believe that the greater number of diastolic accidental murmurs heard over the base of the heart are the diastolic increased portion of hemic murmurs arising in the neck and transmitted to the heart. Leube[1] states that he has never been sure that he heard a diastolic murmur in the absence of a valvular lesion, except that transmitted from a venous hum. Cabot and Locke[22] describe four cases, with the anatomical findings, in which a diastolic murmur was made out, but on autopsy exhibited normal valves. Of the four cases, in one the murmur was due to a permanent dilatation of the aortic ring, depending upon a dilated aorta, measuring eight centimeters in circumference. In the other three cases the writers believe the murmur was caused by the intense anemia which characterized them, although they say that the mode of production was obscure. In all the cases the diastolic murmur was heard best along the left border of the sternum in the third or fourth interspace. In two of the cases the condition of the heart-muscle is not mentioned; in the other two, fatty degeneration was present In all four cases there were systolic murmurs as well as diastolic, but no valvular lesions were found post mortem.

---

*Read before the Minnesota Valley Medical Society, Mankato, May 3, 1904.

Cardiorespiratory or cardiopulmonary murmurs are not always produced in the same way. Theoretically it has been stated that the pressure of a dilated auricle upon the pulmonary artery may cause a sufficient degree of narrowing to produce a systolic bruit. Another class, in practice the largest, seems to be produced by the muscular action of the heart in making pressure upon overlying lung-tissue, and the murmurs are consequently most often audible in the third, fourth and fifth left interspaces where the lappet of lung comes between heart and chest-wall. The degree and kind of pathological change of the lung requisite for the presence of these murmurs is uncertain, or whether indeed they may not arise in absolutely healthy pulmonary tissue, but it is true that they occur, as is stated by Putnam[23], more often in neuropathic and asthenic individuals with poorly shaped chests, and especially the tuberculous. He says that cardiopulmonary murmurs probably have the same origin as cog-wheel respiration, and can be made to disappear by firm pressure on the chest by an assistant. He thinks the nervous disturbance is an important factor, and may affect the lungs as well as the heart.

Cabot and Locke[22] believe that adhesion between pleura and pericardium may account for some diastolic murmurs by transmitting the heart-movements to adherent bits of lung tissue. Every observer of these conditions has noted their variability with change in the patient's position. They are intensified in some postures, and in others may entirely disappear. Potain[12] says the heart acts like a weight upon a bellows: In the horizontal position the heart is comparatively away from the lungs at the front of the thorax; in other positions the heart presses more or less upon the lungs, and hence murmurs increase in intensity; in the knee-chest position the cardiopulmonary sounds are reduced to a minimum. In the dorsal decubitus intracardiac tension and the size of the heart increase. Standing or sitting decreases the same, and Potain believes these changes intensify extracardiac murmurs in some positions of the body over others.

A discussion of pericardial friction sounds is not indicated in this paper. Hannsen[24] describes a whistling accessory sound in a case of mitral insufficiency. The post-mortem examination showed ribbon-shaped strings between the leaves of the pericardium, and he believes the whistling was due to driving the pericardial fluid through these bands in and out. These whistling systolic sounds are not uncommon, and may be due, as in Hannsen's case, to stretched-out pericardial synechiæ.

The pressure of the stethoscope on the chest-wall of a small child can produce a murmur. It is asserted that it may occur also in adults who have thin, yielding ribs, and this possibility should be kept in mind as a source of error. The occurrence of non-valvular murmurs in the infant is discussed by Jacobi, who assigns as the reason for the great rarity of such murmurs that the infant's heart is a more powerful organ in comparison with that of the adult. There are, he says, few cases of undoubted functional murmurs in the infant on record. The heart in early childhood is not affected by many influences contributing in adults to produce functional disturbances and myocardial change; for example, tea, coffee, alcohol, tobacco, gout, uric acid, rheumatism, and the infectious fevers are relatively infrequent. Jacobi[14] says that chlorosis, scurvy, pernicious anemia, leucocythemia, or hemophilia in an adult seldom proceed without the development of a non-valvular heart-sound, while in a child the same diseases are rarely accompanied by murmur.

DIAGNOSIS

In some instances the recognition of non-valvular heart-murmurs offers no especial difficulty, the history or general condition of the patient at once suggesting the cause for the abnormal phenomena. There are frequently cases, however, in which it is impossible to learn upon what the murmur depends without careful anatomical examination. If the attempt be made to contrast valvular and non-valvular sounds heard over the heart, it is of little service in diagnosis, because, while certain qualities may be predicated of non-valvular sounds, they are duplicated by some valvular sounds which cannot by this means be distinguished. It may be stated, however, that accidental murmurs are less likely to be transmitted. Their area of audibility is less. The quality of sound is as a rule soft and blowing, rather than harsh. They are heard most frequently over the base, yet, as above noted, may be found at the apex. The pitch is low. A characteristic quality is that from time to time they change in intensity, or even disappear, with lessening of excitement, or change with the position of the patient, to a greater degree than do valvular sounds. The presence of the "humming top" sound in the bulb of the jugular often determines the diagnosis of a hemic murmur over the base of the heart. A cardiorespiratory sound may cease when the patient holds his breath, but nothing is proven if the murmur continues under this condition.

In a given case with a bruit occurring in the course of general infection, like rheumatism, it may be and often is impossible to say whether it is caused by endocarditis, myocarditis, is hemic, or is due to a relative insufficiency. The diagnosis of these relative insufficiencies (of the mitral or tricuspid) is difficult to make, and can rarely be more than a probability until the subsequent course of the case is known.

Accidental heart-murmurs occur in the course of life-insurance examination with comparative infrequency. The nervous or dynamic murmur due to temporary excitement is the most often encountered, and offers no difficulty if the examiner appreciates its significance. Applicants have been rejected for insurance on account of such a murmur, for another examination in some instances has demonstrated the presence of a purely nervous murmur where an organic lesion had formerly been diagnosed. However, the foregoing part of this paper should have shown that only a very small proportion of accidental murmurs arise from perfectly harmless conditions, and therefore the recognition of an accidental murmur should be noted carefully for review by the medical authority of the insuring company. Keating[23] says the presence of murmur is not always indicative of disease of the heart, and an applicant should not at once be rejected because the examiner hears a murmur on one occasion. It is better to postpone the examination. Greene[3] cautions the examiner against possible error, in the case of an over-rapid and tumultously beating heart, on two grounds: First, existing organic murmurs may under these conditions be obscured, and, secondly, "an organic murmur reported when nothing more than a temporary dynamic or accidental murmur or harsh heart sound exist." The murmurs associated with anemia do not often give the examiner trouble. Cardiorespiratory sounds are at least suggestive of lung disturbance, and should call for especial care in the examiner, and be noted in the report. It has been truly said, that of the factors that go to make the picture of heart disease, the murmur is the most deceptive, and affords the least valuable information. The diagnosis of a non-valvular sound is dependant, not so much upon any quality of the sound itself, as upon the exclusion first of all of those points which indicate a valvular lesion, and then the recognition of factors which can produce accidental heart-sounds in the absence of valvular defects.

There are no acoustic qualities of accidental murmurs by which they can be distinguished from organic lesions. There is truth in what Stokes[18] said long ago: "The facility of making a correct diagnosis between functional and organic diseases of the heart is not so great as modern writers lead us to believe, and we more often arrive at a just conclusion by instinctive skill, the result of experience and judgment, than by communicable rules of diagnosis."

CONCLUSIONS

Accidental heart-murmurs in anemia may be caused by either lessened cohesion of the blood, relative insufficiency of the valves, or increased velocity of the blood-flow.

Although comparatively infrequent, diastolic murmurs over the heart are found which are not caused by valvular defect, nor transmitted from a venous hum.

Functional disturbances of the heart, such as are occasionally accompanied by accidental murmurs, may lead, if long continued, to organic disease of the heart and blood-vessels.

An accidental murmur may arise through disturbed innervation of the heart; the exact way in which such a murmur is produced is not known.

There is a class of functional heart-murmurs for which no demonstrable cause has been found.

Anomalies in the structure of the heart cause some of the non-valvular sounds occurring in the cardiac region. Deformity outside the heart may, by pressure, also give rise to adventitious murmur.

There are probably instances in which non-valvular heart-sounds without endocarditis accompany a slight degree of muscle degeneration not great enough to cause a displacement of the apex-beat or increase in the transverse area of dullness on percussion. The only sign of pathological condition of the heart-muscle may be the disturbed heart-action. In slight degrees of muscular degeneration recovery may be complete. When the structural change is more pronounced, areas of fibrous tissue develop in the heart-muscle, which later become a factor in heart disturbance.

A large number of accidental heart-murmurs are in reality regurgitant murmurs due to relative insufficiency at one or another ostium. The relative insufficiency may be caused by dilatation of the commencement of one of the great vessels or by stretching of the heart-cavities, causing an increase in the size of the valve-ring. Atheromatous and myocardial degeneration, and over-strain, either mental, nervous, or physical, tend to produce these dilatations.

BIBLIOGRAPHY

1. Leube: Specielle Diagnose der Inneren Krankheiten; 1902, p. 14.
2. Ibid, p. 15.
3. Sahli: Lehrbuch der Klinischen, Untersuchungs-Methoden, 1902; p. 278.
4. Ibid, p. 154.
5. Talma: Weiner Klin Rundschau, Dec. 25, 1898.
6. Vierordt: Medical Diagnosis, 4th Edition.
7. Musser: Medical Diagnosis, 4th Edition.
8. Osler: Practice of Medicine, 1901.
9. Taylor: Practice of Medicine.
10. Anders: Practice of Medicine, 1903.
11. Allbutt: System of Medicine, Vol. VI., 1898.
12. Potain: International Clinics, Vol. I., April, 1896.
13. Jacobi: Transactions Am. Climat. Association, 1899, Reprint.
14. Stokes: Diseases of the Heart and Aorta, 1854; p. 423.
15. Ibid, p. 495.
16. Webster: Jour. Am. Medical Association, July 22, 1899.
17. Hektoen: American Text-book of Pathology, 1901. p. 505.
18. Thayer: Am. Jour. Med. Sciences, March, 1904.
19. Hare: Transactions Association Am. Physicians, Vol. XVI., 1901; p. 1.
20. Phear: Lancet, Dec. 6, 1902.
21. Babcock: Diseases of the Heart and Arterial System, 1903.
22. Cabot and Locke: Bulletin of Johns Hopkins Hospital, May, 1903.
23. Putnam: Boston Medical and Surgical Journal, July 2, 1903.
24. Hannsen: Med. Revue Bergen, Oct. 1898. Ref. St. Paul Medical Jour., Vol. I., p. 124; Review by Snévé.
25. Keating: Life Insurance, 1891, p. 33.
26. Greene: Examination for Life Insurance, 1900, p. 194.
27. Broadbent: Heart Disease, 1900.

A STUDY OF THE EFFECT OF BORAX AND BORIC ACID ON THE HUMAN BODY, WITH PARTICULAR REFERENCE TO THEIR USE AS FOOD PRESERVATIVES

By Charles F. Dight, M. D.

Professor of Physiology in the Minneapolis College of Physicians and Surgeons. Formerly Professor of Practice of Medicine and Hygiene in the American Medical College, Beirut, Syria, and Attending Physician to Prussian Hospital at Beirut.

MINNEAPOLIS

In Two Parts—Part I

Few matters lie closer to our interests than those which pertain to the character of the food we eat. This fact has wisely led in civilized countries to legislation intended for the protection of the purity of food products and the prohibition of harmful adulterations and ingredients in foods. Everyone must be in favor of all such laws and of their rigid enforcement against anyone who would for commercial, mercenary or other purposes, endanger public health by the use of objectional preservatives.

Much of our food is, however, of such a nature that, under ordinary conditions, it tends to and unless prevented by artificial means will, in many cases, undergo fermentative or putrefactive changes as a result of bacterial action, before the time when, in the ordinary course of trade, it reaches the consumer. Without artificial treatment by some means, foods which are in every day use would become tainted, to a greater or lesser degree, and would have to be rejected, at a loss either to the merchant or to the consumer, or consumed in a condition which not only makes them less palatable, but even dangerous to health. Cases very frequently occur of ptomaine poisoning and of other injurious effects from the use of meat, cheese and other foods which have not been properly protected against these changes.

Meat especially, if not treated by some artificial means, often reaches a condition before the time of its consumption which makes it unfit for food. A decomposing process, in the case of meat, begins substantially with the extinction of life in the meat. This process continues for lengths of time varying with the conditions, and is up to a certain point a process which renders the meat even more palatable, more digestible and every way more fit for diet than strictly fresh meat. If uninterfered with, the natural process of decomposition is usually followed by putrefaction as a result of bacterial action and the meat becomes not only unpalatable, but even dangerous as an article of diet.

It is self-evident and the history of common usage has demonstrated, that if some preservative process or ingredient is used which postpones, even if it does not eventually prevent, the putrefying process, the meat is thereby kept fit for food for a longer period of time; and the result is not only an economy to the merchant and to the consumer, but is also a protection to public health. Any food preservative, therefore, the use of which can have no harmful effect, or the general use of which will involve much less danger than that involved in the use of unpreserved meats, must be of great public benefit; and the proper use of such preservatives should be favored and protected, rather than opposed, by legislation.

The use of preservative means and processes is as old as history itself. With the exception of refrigeration, the means employed have changed comparatively little; but modern science has given us, in addition to the more common means, others, some of which are even more desirable than those of older and more common use. As to most of them, both the old and the new, there are objections which can be raised with plausibility; but in many instances, when examined, such objections are shown to be unfounded. Among well known and generally well accepted means of preservation of meats and other food products are the processes of refrigeration, of drying, and of smoking; and the introduction of preservative substances, either in connection with these other processes, or independent of them, such as the use of common salt, either in powdered form or in the form of brine; the use of saltpetre, the use of sugar in various forms, of acids, particularly the use of vinegar, which is acetic acid; and the various processes of pickling and of preserving by syrups, not to mention the various condiments and spices that are used largely for their preservative effect. These are all means well known to every housekeeper; but there is not one of them, excluding refrigeration and drying, which is not open to the objection of danger in case of excessive use, which is the basis of the usual objections made to the use of most preservatives; but experience has shown that, whatever objections there may be to their use, such objections are so small in comparison with the advantages accruing from their use, that the more safe and reliable ones have been and are well accepted and continue in common use.

In late years the boron preservatives, meaning particularly, borax and boric acid, have come into very wide use. This is not only because of their efficiency as preservatives; but also because their use for that purpose is less open to objections, from the standpoint of the consumer, than the use for the same purpose of other more common preservatives. In view of the usefulness of borax and boric acid and their established safety when properly used as meat preservatives, it is unfortunate that their merits were not appreciated by the general public at an earlier date. The opposition to their use arises largely, I believe, from prejudice and from natural aversion to the introduction of new methods. Many of the objections which have been urged against the use of borax and boric acid as meat preservatives could, upon the same grounds in some instances, be even more strongly urged against the use of common salt.

In England the Food and Drug Act permits the "addition of any ingredient, if not injurious to health, if the same is required for protection or preservation of the food article." Borax and boric acid are more commonly used in England than elsewhere, and their use is becoming more and more common; and in view of proposed legislation against them, due undoubtedly to a misunderstanding of their nature, it becomes an important question to consider as to whether the boron preparations are objectionable as meat preservatives. The conclusion to which most students of the subject, and especially those who have given the question serious and unprejudiced investigation, have arrived, is, that the proper use of borax and boric acid for the preservation of meats is not harmful to the consumer and that their use for that purpose is a desirable one.

It may not be easy to bring the public to accept this view, for the vague opinion of the public is that all food preservatives, aside from refrigeration, common salt and perhaps a few others, are harmful. It is felt by many that this is the better view to take, in that greater safety, as they assume, lies in the non-use of preservatives. But their non-use means the occurrence in many cases, of putrefactive changes in meat, and the taking of ptomaines into the system, the results of which, even if not severe acute poisoning, are prejudicial to health. The non-use, therefore, of food preservatives is often attended with a danger which their use prevents, while the proper use of certain ones it is believed adds no danger in itself.

If borax and boric acid harm the consumer of them, it is self-evident they must do so by coming in contact with some of the interior parts of the person's body. After being swallowed with food, the parts they encounter are: 1st. The digestive fluids and mucous membrane of the stomach and intestines with its secreting cells, its nerves and absorbing vessels, which latter convey the borax and boric acid into the blood. 2nd. They then mingle with the blood, effecting its reaction, and encountering its ingredients, such as the white and red corpuscles and the proteids in solution. 3rd. The blood then carries them throughout the system generally and all cells of the body everywhere will encounter the borax and boric acid in weak solution. 4th. In that they are excreted by the kidneys, its cells encounter the borax and boric acid in larger volume or in greater concentration than perhaps any other organ except the stomach and intestines, the liver being intermediate in this respect between them.

The study therefore of the effects of borax and boric acid in the body must take into consideration their action on all these parts.

This extensive study would not be necessary if they had some positively ill and easily demonstrable effect; that would at once condemn them as food preservatives. But in that they have no such effect they must be followed and studied along their whole course through the body. Their greatest effect, it is safe to assume, will be on those organs which encounter them in largest quantities,—the stomach and intestines, the liver and urinary organs.

This principle is not true of course of the action of all substances on the body. Some have a specific action, exerting greater effect on one part than on another, independent of their quantity; but borax and boric acid have no such specific action. Borax exerts what effects it has by virtue, seemingly of its alkalinity alone, and boric acid by virtue of its acidity.

EFFECT OF BORAX AND BORIC ACID ON THE DIGESTIVE JUICES AND ON DIGESTION OF FOODS

The property which the most important digestive juices have to digest food, depends upon the digestive ferments or enzymes which they contain, aided in the gastric juice by its natural acidity, and in the pancreatic juice, bile and intestinal juice, by their natural alkalinity.

Digestion in the intestines by these alkaline fluids is favored by borax in moderate amount, because being weakly alkaline it maintains, but does not excessively increase the natural alkalinity of the fluids.

Boric acid, on the other hand, scarcely at all retards intestinal digestion, because so weak an acid as to scarcely at all, even in large amounts, diminish the alkalinity of these fluids.[1]

In the stomach, boric acid favors digestion, by

---

(1) Boric acid has no perceptible sour taste, and I find that in saturated solution of 6 per cent, it only just neutralizes its own bulk of 0.6 per cent solution of carbonate of soda.

being of a reaction the same as that natural to the gastric juice. Borax, because of its alkalinity, somewhat lessens the acidity of the gastric juice, and may, therefore, temporarily retard gastric digestion, but this retardation is no doubt only temporary, for the borax soon passes out of the stomach by absorption or down into the intestines, where its effect is beneficial,,[2] while the effect left behind upon the stomach is that of alkalies generally, viz.: increased secretion of gastric juice and more rapid digestion thereby. Alkalies are regularly given for this purpose, and their great advantage is that they act as natural promoters of secretion, as does our saliva, which, being alkaline, provokes a flow of gastric juice when taken into the stomach. To take the ground, therefore, as some have done, that borax is harmful to the gastric glands, because being an alkali, it stimulates and weakens them when the stimulation is repeated daily, seems ill advised, when nature has provided that our alkaline saliva shall do this very thing each time we eat. But worse for this position still is the fact that there is nothing which stimulates to such free secretion of gastric juice as does proper food itself. (Foster's Physiology, 6th Amer. Ed. p. 266.) [3]

That this is the effect of borax and boric acid on the digestive juices and on digestion is clearly indicated by well known physiological and chemical facts, and is supported by experimental evidence.

The digestive juices may be prepared from the digestive organs of a dog or pig, and the effect of borax or boric acid on these juices to increase or lessen their digestive power, is easy to determine. A known quantity of food, and of digestive juice made properly acid or alkaline, are mixed without borax or boric acid, ana kept for some hours at the temperature of the body. The food becomes gradually disintegrated and part of it dissolves. Chemical examination shows that the dissolved portion has more or less completely undergone the process of digestion, and the quantity digested is determined. Another like quantity of the same kind of food and digestive juice is mixed with borax, and another with boric acid, and both treated in a manner like the first sample. If borax or boric acid acts harmfully on the juices, less food will be digested than in the sample not containing them.

Studied thus, it is found that borax and boric acid do not destroy the ferments of the digestive juices upon which their digestive power depends[4] and that their action on food digestion is as already stated, caused no doubt wholly by the alkaline effect of one, and the acid effect of the other.

Studied in this way, R. H. Chittenden has found that borax in percentages greater than would perhaps ever exist in the alimentary canal from taking boraxed meat, decidedly increases the intestinal digestion of proteid food; and in the intestine it is where the great labor of proteid digestion is performed.

He finds that boric acid in like quantities (up to 1 per cent) has little or no power of checking intestinal digestion of proteids. Stomach digestion, he finds, is favored by boric acid in quantities as high as 2.5 per cent, while borax in .2 per cent retards it in test tube experiment; but in the stomach, out of which the borax soon passes, this retardation, as stated, is no doubt only temporary, and is soon followed by increased digestion.

The conclusion, therefore, is, that on the digestive juices and on digestion, borax and boric acid in any moderate amount exert no ill effect, but in some parts of the alimentary canal, accelerate digestion.

THE EFFECT OF BORAX AND BORIC ACID, WHEN INGESTED IN QUANTITIES SUCH AS WOULD BE TAKEN IN MEAT, IS NOT THAT OF AN IRRITANT TO THE MUCOUS MEMBRANE OF THE STOMACH AND INTESTINES; NEITHER ARE THEY IRRITANTS TO THE CELLS OF THE BODY GENERALLY.

Borax is such a mild alkali as to be almost wholly lacking in irritating effect on animal tissues in moderate amount.

The strength of its alkalinity, tested by titration with an acid, I find to be a trifle less than that of bicarbonate of soda, and this latter alkali is so weak that it is applied as a domestic remedy in the form of the pure powder to fresh burns and to abraided surfaces.

Dr. Oscar Liebreich has shown that a .5 per

---

(2) A solution of borax, though less alkaline, as perfectly emulsifies fats as does the carbonate of soda, which exists in the bile and pancreatic juice and has an emulsifying action there.

(3) The good effect of a slight degree of alkalinity of the food first on entering the stomach is indicated by the fact that nature has provided that it be so, for our food if not already alkaline on entering the mouth, generally becomes so before it is swallowed, by the alkaline saliva mixing with it. The first gastric juice too, secreted at the beginning of digestion of a meal, is only faintly acid as compared to that secreted later on, affording time for the alkaline borax to pass out of the stomach just as our alkaline saliva does, before the natural period of the greater acidity of its contents.

(4) To pancreatic juice which I prepared from the pancreas of a dog, and made alkaline by adding 0.1 per cent of carbonate of soda, I added boiled white of egg and then borax to the amount of 1 per cent, and kept it at a temperature of 100° Fahr. Peptone, the perfect product of proteid digestion, promptly made its appearance as indicated by the peptone test. The same juice quickly digested starch by changing it to sugar, and emulsified fats. To another portion of this pancreatic juice I added 1 per cent boric acid. It also promptly changed the egg proteid to peptone and starch to sugar. Both tests proved that neither borax nor boric acid in quantities of 1 per cent destroys the ferments of the pancreatic juice (trypsin and amylopsin) which digest proteids and starches; nor do they suspend the action of these ferments. Gastric juice likewise, which I prepared from a dog's stomach, changed proteids to peptone in the presence of 1 per cent borax or boric acid.

cent solution of borax applied directly to the interior of the living stomach of the dog causes no structural change in the cells that line its mucous surface—the gastric epithelia, and a stronger solution does not affect the intestinal epithelia. This is a stronger solution of borax than would likely exist in the human stomach from eating boraxed meat. I have myself taken at one dose into my empty stomach, three grams (46.29 grains) of borax in a 1 per cent solution in water, without any feeling of discomfort following it, and no symptoms whatever were produced.

Boric acid, likewise, is one of the mildest acids known, being in this respect comparable to the carbon dioxide of the soda water fountain, or of our exhaled air. It is a sedative to irritated and inflamed surfaces, and hence is used in inflammation of mucous membranes, especially of the urinary tract, being given internally, and is often applied locally in the cavities of the body, and to fresh wounds and to ulcers in its full strength in the powder form.

Dr. Liebreich found that a 5 per cent solution of boric acid applied directly to the cells that line the interior of the stomach, produced no irritation and exerted no injurious action whatever, while a 5 per cent solution of common salt he finds exerts an inflammatory action on these mucous surfaces.

Borax and boric acid cannot therefore be regarded as irritants to the tissues in such quantities as might be taken in meat preserved by them. To show their non-irritating action as contrasted with the decidedly irritating effect of condiments and certain foods habitually taken into the stomach, I have had the following series of diagrams made of the human eye, showing how it is irritated and becomes congested by the application to it of these substances.

Congestion with enlargement of vessels is one of the most constant changes seen to occur in irritation of any vascular part of the body, and the increased size of the vessels and the number of vessels which, by increased size, are brought into view, is everywhere taken to indicate the degree of irritating action exerted by stimuli, a mild stimulant causing slight congestion, a strong one causing much congestion. By applying any irritant, therefore, to the eye and noting the degree of congestion produced, we may judge how irritating the substance is as compared with other irritants. On no part of the body can this be studied as well as on the front of the eyeball, for its vessels can be seen through the thin transparent mucous membrane that covers them and in which they lie. They have no vaso-motor nerves in their walls as vessels elsewhere have, and by the process of diffusion they are in a few seconds reached by agents applied in solution to the ball and the effect can be immediately seen and studied. At the same time these vessels of the eye respond in no peculiar way to irritants, so that the effect shown, in the following drawings, upon them of the agents I have used, is the same as would be exerted by these agents on blood vessels of other organs of the body.

The drawings were all made from an eye which is emmetropic and normal in vascularity. They were made four times the natural size, and then reduced by photography. The time extended over many weeks, no two drawings being made on the same day, so that any irritation caused by one application had completely subsided before the next was made. In each case (except in No. 9, in which one application only was made), a few drops of the solution were put in the eye one and one-half hours before, and again one-half hour before, and again just before beginning the drawing, to get its full effect on the eye.

Diagrams of the eye, the ball rotated up and outward, showing its vessels normal, were at hand previously prepared, and the extra vessels brought to view by the application were traced in the diagrams, making a very complete showing of the effect of each substance in producing congestion of the eyeball.

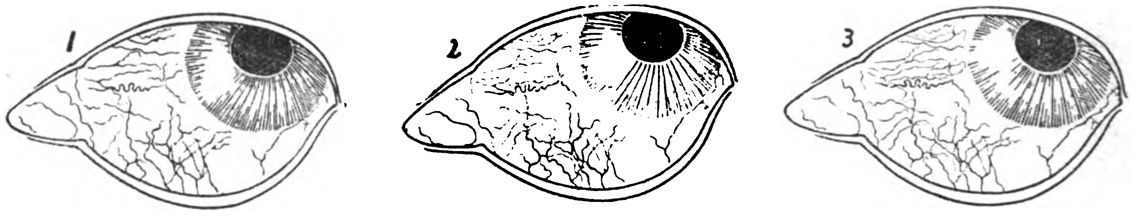
(See drawings on the next page.)

Now the chief ill effect on the tissues of irritants is to induce pathological congestion with its results, and since a 5 per cent solution of borax or boric acid has an effect almost identical with that of pure water (Figs. 2, 3, 5), and they at the same time exert no specific action on tissues, it places borax and boric acid among the most bland chemical agents known. Their smarting and irritating effect as compared with vinegar when diluted 13 times, and with table sauce (Figs. 6-9), sink into insignificance. They exert less irritating effect than ordinary soup (Fig. 8).

Now it is evident that if in a 5 per cent solution, borax and boric acid produces practically no irritation, their effects as irritants upon the cells of the body generally will be infinitesimal or wholly nil, when carried by the blood to the cells in the strength of only .088 per cent solution, for that is the strength of their solution in the blood when the large amount of 70 grains of borax or boric acid is dissolved in the eleven or twelve pounds of blood in the average adult body. In other words, 70 grains of borax in 5 per cent solution in the alimentary canal, when absorbed and mingled with the large volume of blood in the body, become diluted to an .088 per cent solution.

In the light of the preceding facts, demonstrating the non-irritating effect of borax (and boric acid) it is apparent how little truth there is in the

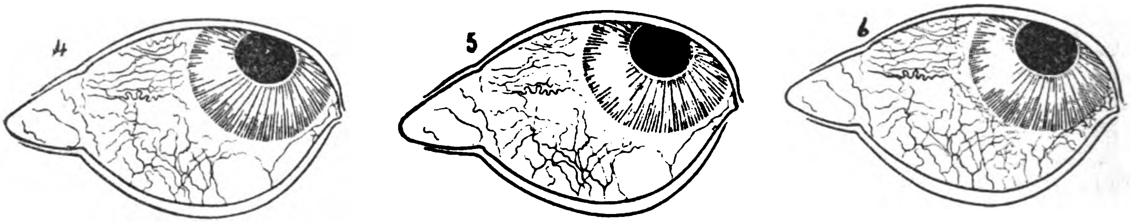
Drawings from life, showing the degree of congestion of the eyeball caused by the application to it of borax acid, as compared with various other substances.



Vessels normal, nothing applied.

Showing effect of pure distilled water.

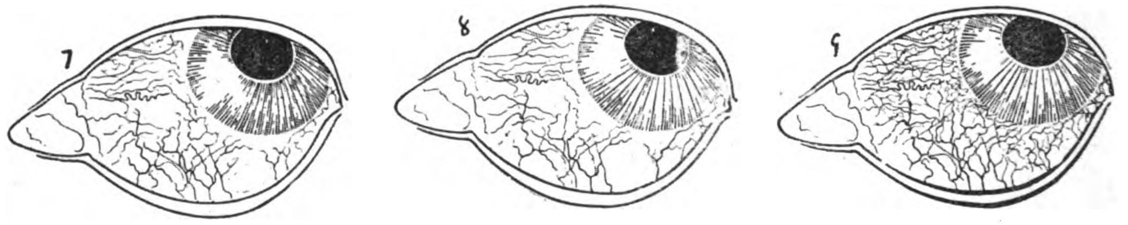
Showing effect of 5% borax in water.



Showing effect of 5% common salt in water

Showing effect of 5% boric acid in water.

Effect of table vinegar diluted one part to 13 of water.



Effect of Milwaukee beer in full strength.

Effect of ordinary vegetable table soup.

Effect of Worcester's table sauce.

pliant[5] statement that borax "induces congestion and inflammation of the kidneys." In England and Scandinavian countries where borax and boric acid are used extensively as preservatives of both meat and butter, diseases of the kidneys are not known to be increased by them[6] and in the few cases where the presence of albumen in the urine has been attributed to the taking of borax it has not been shown that the albumen could not have appeared from other causes, or that the cases were not cases of idiosyncrasy to it. The kidneys, and other viscera, of guinea pigs, to which I fed borax for 84 days, showed no evidence of irritation or congestion having been induced by it. (See post-mortem and microscopic examination in accompanying table.[1])

THE EFFECT OF BORAX AND BORIC ACID ON THE BLOOD CORPUSCLES

This effect can be readily studied under the microscope by mixing fresh blood with borax and boric acid in solution. I have thus studied the effect of a .1 per cent and 1 per cent solution of borax, boric acid and common salt.

In each case with the .1 per cent solution the red corpuscles were bleached and became invisible, the coloring matter having dissolved out of them (and they in time became enlarged); but pure water has the same effect, a phenomenon of no significance in this connection, in that it is simply the natural solvent effect of the water. It is to be noted, however, that the stronger 1 per cent solutions have less effect in this way; because since containing more of the salt than a .1 per cent solution, and being more dense, they have less solvent power on the coloring matter.

---

(5) A moderate degree of physiological congestion of vascular organs occurs during their natural activity, for the performance of function in vascular organs is dependent upon blood supply. The stomach becomes bright red in color when food is taken into it. The renal oncometer demonstrates that the kidney becomes actually enlarged by increased flow of blood into it when simple pure water, or common salt in weak solution, or a mild diuretic is injected into the blood of the general circulation, the purpose of the congestion being to excrete these substances and maintain a uniform condition of the blood, this being favored by the physiological congestion which is harmless to the kidneys.

(6) Chas. J. Knight, editor of the Chicago Daily Produce, in 1899, testifying in the "Pure Food Hearings before the Committee on Manufactures, United States Senate," said, "When I was in England I looked up all the authorities on boron salts. At one time we offered a reward of $250 or $300, or something like that, for any case that could be shown where there ever had been or where it could be proved that there ever had been any injurious effects from the use of a boron preservative, and the people who had been talking about the injurious effect of the boron preservatives up to that time didn't produce it at all, although we offered to pay the expense of anybody who would produce it—not only to pay the reward, but to pay the expenses of the investigation if they would only show where the injury could be found, if they would only point it out. It has not brought to light one single case."

The borax and boric acid of .1 per cent solution simply bleach and do not dissolve or break up the corpuscles. I demonstrated this by adding staining fluid, when the presence of the bleached corpuscles was made evident by the colored rings that marked their outline. Borax and boric acid have no coagulating effect on the coloring matter of the red corpuscles as does tannic acid, nor do they make transparent the protoplasm of the white corpuscles, as does acetic acid; neither does borax when taken in large quantities and for a long time seem to have effect in increasing or diminishing the number of blood corpuscles, as indicated by feeding experiments on the guinea pig.

Now there are no cells in the human body more sensitive to changes in environment or to the effect of reagents, than the blood corpuscles, and microscopic examination of them shows that they are no more affected, or differently affected, by a .1 per cent solution of borax, or boric acid, than by simple pure water; and a .1 per cent solution of borax or boric acid is a stronger solution, as already shown, than would likely ever exist in the blood. The action, therefore, of borax and boric acid on the blood corpuscles in any specific sense must be regarded as nil.

BORAX AND BORIC ACID EXERT NO SPECIFIC ACTION ON THE PROTEIDS OF THE BLOOD

If borax and boric acid after being absorbed from the stomach or intestines into the blood, precipitated the blood proteids, or albuminous ingredients, which naturally exist there in solution, this would render their use absolutely inadmissible as food preservatives, for in their precipitated form the proteids would obstruct the capillaries, and could not serve the purpose of nutrition. It is not the property, however, of borax or boric acid to precipitate the blood proteids. Common salt, magnesium sulphate and other neutral salts do this when added to blood in large excess. But they even would perhaps never be absorbed into the blood in quantities large enough to do it, much less would borax and boric acid, to which the property of coagulating proteids is foreign.

I have added borax and boric acid in proportions of 1 per cent, 5 per cent, and 10 per cent to separately measured quantities of living blood immediately after it was taken from the vessels of a living ox, and they did not precipitate either of the three great proteids of the blood,—the fibrinogen, paraglobulin or serum albumen. The clotting of the blood was not prevented, but only in case of the 5 per cent and 10 per cent of borax was it somewhat retarded, showing that the fibrinogen, the important clot forming proteid, had not been precipitated.[7]

In the serum of this same blood which had received 1 per cent, 5 per cent and 10 per cent of borax and boric acid, I found the paraglobulin and serum albumen normal in solution, as indicated by their responding in every way to reagents, as did the paraglobulin and serum albumen in other samples of serum from the blood of the same ox, taken at the same time, but to which nothing had been added.

These proportions of borax and boric acid in blood, viz.: 1 per cent, 5 per cent and 10 per cent of its weight, are far greater than would ever obtain entrance into the blood, through food, even if the meat, milk and butter one ate were treated with these preservatives.

Assuming that a person of average weight, ate at one meal two pounds of meat,—about the quantity taken in two or three days, boraxed to .5 per cent (70 grains of borax in two pounds of meat) and that the borax were all quickly absorbed, it would mean that less than 70 grains of borax were in his blood for a brief time.[8] But assuming it were all there, this 70 grains, when mixed with the person's blood, would be so diluted in the eleven to twelve pounds of blood which the body of the average adult, weighing 150 pounds contains, as to make a solution of borax of a strength of but .088 per cent, or 1 part in 11,363 parts of blood. I have added borax and boric acid to fresh ox blood in this per cent also, and coagulation took place naturally, and the proteids in the serum responded normally to all reagents used in detecting their presence and solubility.

Since this is true also of blood which has received such greater quantities as 5 and 10 per cent of its weight, the conclusion seems well grounded that never would borax or boric acid taken with food, enter the blood in quantities to harmfully affect the blood proteids. In harmony with this I find that boric acid added even to saturation to a proteid, and kept warm for hours, does not change it to acid albumen, as does a .1 per cent solution of sulphuric or hydrochloric acid. I have also found that the blood of guinea pigs clots normally, though the pigs had been fed on borax for 84 days, and the para-

---

(7) Five per cent of common salt in blood prevents clotting. Now, the coagulation of blood out of the body of an animal is a normal occurrence. Common salt prevents the occurrence of the natural. Borax and boric acid in much larger quantities do not. I find too, if common salt be added to clear blood plasma to the amount of five per cent, a proteid precipitate appears. Not so with borax or boric acid.

(8) Its elimination by the kidneys would begin almost as soon as the first of it entered the blood, and would continue from that time on until all that entered was excreted, so that at no time would all the 70 grains be in the blood. Dr. Johnson (Therap. Gaz. 111, 114), finds that borax or boric acid appear in the urine in 10 minutes after their ingestion. I have myself verified this for borax. At 11:30 o'clock, three and one-half hours after eating breakfast, I administered 3 grams (46.29 grains) of borax in 300 c.c of water, and in 10 minutes borax appeared in the urine. In 20 minutes free boric acid and borax were present.

globulin and serum albumen were found normal also in the blood serum.

EFFECT OF BORAX AND BORIC ACID ON THE REACTION OF THE BLOOD

Our blood is normally alkaline in reaction, and must be constantly kept so to sustain life. This reaction maintains the alkalinity of cell protoplasm and aids in absorbing carbon dioxide from the tissues. If our blood should become even neutral in reaction for a short time life would cease. Its alkalinity is maintained by the presence in it of alkaline sodium salts—sodium carbonate, sodium bicarbonate and alkaline sodium phosphate. Borax is also a mild alkaline sodium salt, and assists in the blood in maintaining its normal reaction, and could not in any quantity give the blood a reaction unnatural to it. Neither would boric acid, for it is too weak an acid to perceptibly, even in large amounts, lessen the blood's alkalinity. That this is so is shown by the fact that a saturated solution of 6 per cent of boric acid does not even neutralize its own bulk of .7 per cent solution of sodium carbonate. The blood's average alkalinity, about equals a .35 per cent solution of sodium carbonate. Seventy grains of boric acid makes a solution in the blood of a strength of but .088 per cent, or 1 part in 11,363 parts of blood, a saturated solution being seventy times stronger; and if a saturated solution of boric acid fails to neutralize its own bulk of a .7 per cent solution of sodium carbonate, an .088 per cent solution of boric acid would have an almost infinitesimal effect in lowering the blood's alkalinity.

On the other hand 70 grains of borax in the blood would increase its alkalinity somewhat. How much? As much as the alkalinity of a .35 per cent sodium carbonate solution is increased by adding to it the alkalinity of an .088 per cent solution of borax. This, (borax being a milder alkali than sodium carbonate or even sodium bicarbonate), would raise the blood's alkalinity from the equivalent of a .35 per cent sodium carbonate to less than a .438 per cent sodium carbonate solution. But, as already stated, 70 grains of borax taken with one meal even would not all be in the blood at one time, and the 70 grains distributed among the three meals of the day, elimination occurring meanwhile, would increase very slightly indeed the alkalinity of the blood.

Now, while a too great increase in its alkalinity may as certainly do harm as a too great lowering of it, we may safely assume that no increase caused by taking borax to the extent of 2 grams or more a day in boraxed meat would be an excessive increase. In evidence of this is the fact that in former years when it was thought that borax was beneficial in epilepsy, it was given for long periods, and sometimes to 60 to 160 grains daily. Dr. H. A. Hare, professor of Therapeutics in Jefferson Medical College, has recently given it in similar doses. In his System of Practical Therapeutics, 1892, speaking of borax in epilepsy, he says: "We start with small doses, 10 grains three times a day, and push up to 80 or 90 grains daily." The U. S. Dispensatory, 1879, while naming 5 to 30 grains as the dose of borax, says: "In the dose of 6 drachms" (360 grains) "borax has created no unpleasant effects, except a temporary sense of oppression in the stomach, or at most, nausea and vomiting."

These large quantities must somewhat increase the alkalinity of the blood, but since no discoverable harm comes from it, except possibly in the rare cases of idiosyncrasy to it, it is clear that 2 grams or more of borax daily are well within the range of safety. I have taken 3 grams at a single dose into my empty stomach and no symptoms whatever were produced.

These large quantities of borax and boric acid can be taken because these substances have no specific action on the body. What effect they do exert is because of the mild alkalinity of one, and the milder acidity of the other; and the whole question of their effect, on parts other than the gastro-intestinal mucous membrane, probably resolves itself into the question as to *how much the blood may have its alkalinity increased* by borax without resulting in harm, and *how much its alkalinity may be lessened* by boric acid without harm.[9] As to boric acid, no amount ever needed to preserve fresh meat would do harm, except in case of idiosyncrasy to it which is rare, for .5 per cent (one-half of 1 per cent) boric acid, and also of borax, I find from a series of trials of it on meat and blood is the maximum needed for preserving purposes, and in practice much smaller quantities are used, varying from .5 per cent to .1 per cent, and even less, with beneficial effects."[10]

---

(9) In accordance with this belief, experiments which I am conducting on frogs, seem as far as they have gone, to show, that frogs may be kept constantly in alkaline solutions of the strength of .4 per cent sodium carbonate, without shortening their lives, their fluids, as shown by titration, and presumably their tissues also, having taken that degree of alkalinity; while they die in a few days in alkaline solutions of a strength of 1 per cent sodium carbonate. On the other hand a .4 per cent solution of boric acid seems not to harm frogs that are kept in it.

(10) Dr. G. M. Sternberg, Surgeon General U. S. Army, finds that "borax and boric acid in the proportion of five-tenths per cent prevent the multiplication of bacterial organisms, and are consequently antiseptic agents of value, although in saturated solution they fail to kill these organisms"—the bacterium termo, which is pre-eminently the bacterium of meat putrefaction, and the species which is invariably to be found in putrefying infusions. (American Journal Med. Sci., Vol. V, 335.)

THE HOSPITAL BULLETIN

NORTHWESTERN HOSPITAL

MINNEAPOLIS

PRIMARY SARCOMA OF THE OMENTUM

In the Service of Dr. W. E. Rochford

This specimen was presented at a recent meeting of the Hennepin County Medical Society. The case is reported on account of the rarity of primary sarcoma of the omentum. Dr. Senn reports a case in which he removed the entire omentum in a man 50 years old. The tumor mass weighed over 30 lb.

Mrs. A——, operated upon by Dr. W. E. Rochford; admitted Dec. 24, 1903.

Her complaint was a tumor in the abdomen, which had been discovered three years ago. Previous to that time she had always been in good health, and since that time has been twice pregnant and successfully delivered both times. This tumor in her abdomen had been examined by other surgeons, and it had been diagnosed a uterine fibroma.

The tumor had grown slowly since first noticed up to last summer, when she had severe attacks of pain; she also had severe chills at times. Her menstruation had always been regular.

Family history was negative; mother living, age 78.

Personal history: house-wife, age 37.

Present condition: temperature 99.2°; pulse, 98; respiration, 22.

LABORATORY REPORT

Urinalysis: Color, amber; sediment, slight; specific gravity, 1020; reaction, acid; albumen, absent; sugar, absent; sediment showed leucocytes and epithelial cells, probably vaginal discharge.

Blood Analysis: Leucocyte count 11,600; hemoglobin estimate, 90 per cent.

Observations at the Operation: A median incision was made, and a large mass was found low in the abdomen, extending up to the umbilicus. Stomach and duodenum were overlaid by omentum and apparently adherent to it.

The blood vessels of the omentum were greatly enlarged and filled with blood. The omentum was markedly thickened. The parietal peritoneum contained numerous cyst-like lobules, some of which hung from a small pedicle. They ranged in size from the size of a pea to that of a hazelnut; some were cup-shaped, probably had ruptured; others were filled with blood. All the organs of the abdomen were apparently free and not connected with the tumor.

The tumor was in two masses, one having very few attachments, but the other attached along its entire length, and in removing it considerable hemorrhage took place.

PATHOLOGICAL EXAMINATION

By Dr. R. L. Tibbets, Resident Pathologist

Macroscopically: The tumor consisted of two large masses, which weighed approximately six pounds. The masses were irregularly lobulated; the larger was oval, measuring 16 c. m. by 12 c. m.; the smaller was somewhat crescentric in shape, measuring 18 c. m. along its edge, and 8 c. m. at its thickest part. The capsule of the tumor was very thin and easily tore; was friable and spongy in places, full of blood, and presented a mottled appearance. Cross section of the larger mass showed clearly a single centre and large hemorrhage areas.

Microscopically: Sections made from the primary tumor, also from secondary nodules. A typical spindle-celled sarcoma. The cells were arranged in groups loosely connected by connective tissue, which in some places is granular, in others fibrous.

The spindle cells do not vary much in size, though seeming to on account of some being cut transversely, others longitudinally. The cells lying along side the connective-tissue bands are parallel, while deeper in the arrangement is irregular. The blood vessels are thin-walled, partly filled with blood. In places the connective tissue is filled with red-blood cells, no vessel-wall being visible. The capsule is of dense connective tissue.

A CASE OF ENLARGED PROSTATE, ACCOMPANIED BY STONE IN THE BLADDER

In the Service of Dr. G. G. Eitel

Mr. S——, a farmer 71 years of age, and weighing 200 lb., entered St. Barnabas Hospital April 18, 1904. He complained of pain in the urinary bladder and dribbling of urine. His past history was unimportant except for a severe chronic bronchitis which had persisted for several years. He had been a heavy drinker until the last year.

Present Illness.—Six years ago he was first troubled with pain on micturition. He was obliged to catheterize himself at times, and once in so doing tore the urethra. In the fall of 1903 he became much worse. He urinated every half hour night and day and had severe and constant pain in the bladder. At this time too he was much annoyed by dribbling of urine.

Physical Examination.—Was unimportant except for coarse mucous râles over chest, and an enlarged prostate gland.

Operation.—A perineal prostatectomy was performed. The prostate was found to be about the size of a hen's egg. A large stone measuring about 2"x1½"x1" and weighing 25 grams, together with considerable detritus, was removed from the bladder. The wound was drained with a rubber tube and iodoform gauze.

The patient's recovery was excellent, although delayed by his severe bronchitis.

HEMATOMA OR APOPLEXY OF THE OMENTUM

In the Service of Dr. C. H. Hunter

In the course of an operation for a refractory retroversion of the uterus on incising the peritoneum a circumscribed red tumor mass, the size and shape of a small egg, lying in the centre of the "apron," came into view. On lifting the mass it was seen to be enmeshed in the omentum. Bright red blood flowed from the side of the darker mass. An eliptical mass of the omentum, including the hematoma, was ligated and cut off, and the rent closed with a running silk suture. The operation was concluded by removing a closed, congested, and knotted tube (the result probably of a sharp attack of peritonitis two years ago), and fastening the tubes to the anterior wall of the uterus.

The exact history of the patient for the few days before finding this blood tumor was as follows: There had been a mild metrorrhagia for the past month. Thursday, at the first examination for some months, the retroverted uterus was swabbed with a co. sol. iodine, replaced with a repositor, and an Albert Smith pessary inserted, a procedure to which the patient was not new. There was more than the usual discomfort complained of. There was no manipulation of the abdomen. Sunday the flow had continued. The uterus was in position, and there was no tenderness. There had been a good deal of pelvic discomfort, and a sharp pain in the lower right quadrant of the abdomen complained of since yesterday; no special tenderness. The area of pain was covered by the hand placed to the right and below the navel, the area in which the hematoma afterward appeared at the operation done Tuesday.

While the case is fresh in mind no handling of the parts is recalled that would naturally account for such an apoplexy of an omental vessel distant from the pelvis, as this apparently was.

Reference is made to this condition in the "Reference Handbook of Medical Sciences, Vol. vi, p. 359, and "Surgical Diseases of the Abdomen," Douglass, p. 707.

A FIBROMA IN THE ABDOMINAL WALL

In the Service of Dr. G. G. Eitel

Mrs. A——, noticed a small mass slightly above the umbilicus two years ago, shortly after the birth of her last child. It was at that time about the size of an almond, and has been gradually growing larger until it was about the size of a hen's egg at the time of entrance.

At operation a fibroma was found situated between the peritoneum and the transversalis fascia.

This case is reported because of the unusual situation of the tumor.

CANCER IN THE UNITED STATES

When Dr. Roswell Park was in Berlin as a guest of the Congress of German surgeons, he was shown much attention and many courtesies. In his address he said that cancer is becoming one of the most prevalent diseases in the United States, and that New York State is in the cancer belt.

ST. MARY'S HOSPITAL

MINNEAPOLIS

MIXED TUMOR OF THE PAROTID

In the Service of Dr. J. H. Dunn.

Mr. B——, aged 63; stock buyer. Forty-one years ago the patient noticed a small movable lump over the angle of the jaw. During the next ten years it increased slowly, reaching the size of a hen's egg. It was still freely movable and symptomless. For the following thirty years, it appeared, as nearly as the patient could tell, to remain unchanged. During the past year it had grown rapidly, especially during the past three months, and had reached a size much larger than a man's fist, covering the whole right side of the face, and projecting below the jaw into the neck, and reaching to the zygoma above, and from the external ear to near the corner of the mouth. The tumor was hard and nodular, nearly immovable, but evidently not attached to the bone. The skin over it was suspicious of some infiltration, and in some places appeared to be attached to the tumor. There was of late much pain from pressure on the auricular nerves.

The clinical diagnosis was mixed parotid tumor, probably undergoing malignant degeneration; and removal was advised, despite the almost certainty that it would be necessary to destroy the facial nerve.

March 17th, the case was operated upon. By working from below and behind upwards the external carotid was exposed and ligatured, and the whole tumor, parotid gland, a portion of the overlying skin, and all neighboring structures were removed in one piece without injury of the incapsulated growth.

PATHOLOGIST'S REPORT

Dr. Chowning reports the tumor to be a chondro-carcinoma, and that there is very little normal parotid gland structure in the growth.

This case shows the folly of leaving this form of tumor so many years, although symptomless and clearly benign. There is great danger of final malignancy or growth so extensive that the sacrifice of the facial nerve will follow. For nearly forty years this tumor might at any time have been removed without this sacrifice, which is so undeniably great that no surgeon would advise it except in the face of even greater perils from the growth. Dr. Hoegh gave the patient this excellent advice fifteen years ago, but he failed to heed it.

PERINEAL PROSTATECTOMY

J. C——, aged 60. The minor symptoms of prostatism have been present since last fall, viz., frequency, especially at night, slowness in starting, and loss of force in stream. Complete retention occurred Feb. 10, 1904, and although it was of very short duration and promptly and aseptically relieved, he has not been able to evacuate the bladder without a catheter since. The prostatic enlargement is moderate in size, and chiefly of the left lobe. The perineal distance is great, it being impossible to reach with a very long finger beyond the left lobe. For the past month there has been a moderate amount of albumen in the urine, a condition long ago pointed out by Ultzmann as frequent in obstruction to emptying of the bladder. The urine is, however, acid and clear.

March 17th, by the incision and apparatus of Young of Baltimore, perineal prostatectomy was performed. There was no difficulty in exposing the prostate, and bringing it to the surface, as advised by this method; but after incising the capsule and attempting enucleation as advised, it was soon found, as Dr. Dunn had predicted, that the enucleation would be very difficult, if not impossible. It was found necessary to remove the gland by morcellement.

The patient is making a very uncomplicated recovery with the exception of a considerable pain and vesical spasm for a short time on the fifth day from a very rapid incrustation of the drainage-tube with urinary salts, which was promptly relieved by changing the tube, and he has had practically no other disturbances. The tube was removed on sixth day, and patient was given permission to sit up.

Some prostates enucleate with great ease, some are difficult, and occasionally it is quite impossible to separate the gland from the urethra and vesical neck by this method. The advice of some writers with more enthusiasm than experience who claim perineal prostatectomy is so easy that they almost hate to do it, should not be taken too seriously. This difference in the enucleability of prostates was early recognized during the vogue of suprapubic prostatectomy. In general, the very large and compact prostates enucleate readily, while the small and more scattered hypertrophies, which often are symptomatically quite as troublesome as the "tumors," are managed with difficulty, either from above or below, though undoubtedly more safely by the latter route.

NEPHRITIS OF INFANTS

On account of the difficulty encountered in securing specimens, the subject of nephritis in infants has received very little attention at the hands of medical men, and the literature of the subject is therefore meagre.

Frey & Martin (Archives of Pædiatrics, January, 1904) give the results of the urine examinations of 100 marasmic infants under three months of age. The average specific gravity of the urine was 1006; the highest 1028, and the lowest 1001. The urine was acid in 64 per cent of the specimens, was neutral in 36 per cent, and alkaline in none. Albumen was found in 19 cases, of which 6 were under 10 days old. Of the 19 cases, 17 had casts, hyaline or granular. A few epithelial casts were also noted, but no blood casts. 14 cases had casts without albumen.

In 10 of the cases albumen was present, and casts were present in one specimen only. Uric acid was abundant in 26 of the cases. Of these 14 had albumen and casts. Casts were present in 23 of the uric acid cases.

Of the 26 cases with large amounts of uric acid in the urine 19 died. In 7 of the cases that died autopsies were held, and uric acid infarcts and parenchymatous nephritis were present in all. In 3 cases an acute interstitial nephritis was found.

The authors conclude that there seems to be a relationship between an increase in uric acid in the urine of infants and the development of nephritis. They further conclude that marasmus alone could not have accounted for the nephritis in some of the cases.

OXALURIA AND NEPHRITIS.

It is not infrequent that one, in examining a specimen of urine, finds a large deposit of oxalate of lime crystals in the sediment. In the majority of such cases the presence of these octohedral crystals is of no significance, and is probably due to the unusual ingestion of certain foods which contain large quantities of oxalic acid, such as rhubarb, tomatoes, celery, spinach, etc. However, in some of these cases, even when the patient is placed upon a diet free from oxalic acid, or upon a very strict liquid diet, the oxalate of lime crystals will persist, and will be associated with small quantities of albumen and usually hyaline, sometimes granular and epithelial, casts in the urine. Senator, von Noorden, Da Costa, and Simon have described such cases.

Such a case has recently come under the observation of the writer. The patient is a man fifty-five years of age and, aside from nocturnal attacks of oppression in his chest, he gives no symptoms of nephritis.

The urine is normal or slightly below in sp. gr., contains usually a trace, sometimes more, of albumen, but never a large amount. Hyaline casts are always present in the urine in small numbers, more in some specimens than in others. Sometimes a few granular casts, and occasionally epithelial casts will be found, together with many cylindroids. In all the specimens of urine examined, some twenty or more, oxalate of lime crystals are always present in large numbers. Many times they cover the cylindroids, and are clinging to the casts. A rigid diet free from oxalic acid produces no appreciable change in the number of the crystals. Cases of this type are undoubtedly of the nature of a true nephritis associated with an oxaluria. The oxalate of lime crystals probably do not act as an etiological factor.

Purdy states that oxalate of lime crystals sometimes appear in the sediment of cases of interstitial nephritis. The increased area of cardiac dullness to the left and the systolic bruit at the apex and accentuated aortic 2d sound met with in this case, help to classify it as a chronic interstitial nephritis with oxaluria.

GEORGE DOUGLAS HEAD, M. D.

RELATION OF UREA EXCRETION TO PUERPERAL ECLAMPSIA

Dr. F. S. Clark says, in the Cleveland Medical Journal, that urea excretion has little significance in diagnosticating threatened eclampsia, except that an estimate of the quantity may be of value in connection with other symptoms.

NORTHWESTERN LANCET
A SEMIMONTHLY MEDICAL JOURNAL
The Official Organ of the Hennepin County Medical Society
W. A. JONES, M. D.................. EDITOR
Editorial Office, 515 Pillsbury Building
W. L. KLEIN, PUBLISHER
SUBSCRIPTION, $2.00 A YEAR.
839-840 Lumber Exchange..................... Minneapolis

JUNE 15, 1904

THE STATE MEDICAL SOCIETY

As the editor of THE LANCET left for Atlantic City immediately upon the adjournment of the State Medical Society, our usual comments upon the work of the state body will go over until the next issue. Dr. J. W. Bell, of this city, was elected president, and the secretary and treasurer were re-elected.

A BRAND NEW MEDICAL SCIENCE

A local newspaper of Bemidji says that "the genial proprietor of the Opera buffet" is going to Duluth for a month to finish a course in "the new medical science of Chiropractic," in which he has already taken several lessons. Upon completing the course the aforesaid genial proprietor will begin practice in Bemidji.

We are further told that Chiropractic "is quite the rage in Duluth and at Brainerd and several other towns in this vicinity."

Like osteopathy, it does not take long to graduate in this new science; and no doubt this will add to its popularity.

A MEDICO-LEGAL CASE

The case of the Rev. Tosten Eggen, who was recently sent to the workhouse in Minneapolis, furnishes an illustration of the necessity of providing a place for the helpless and infirm. The reverend gentleman is a sufferer from hereditary chorea, and had been a patient in the City Hospital until his bed was needed for a more acute case. After his release from the City Hospital he drifted about from one place to another, and eventually landed at the poor farm, escaping from there two or three times. As no place was open to him, he was reluctantly sent to the workhouse on a charge of vagrancy.

Eggen has had chorea for years, the disease developing in adult life, and, as is the inevitable result in all these cases, he became demented.

His mental weakness explains his restlessness and wanderings. He will become more and more helpless, mentally and physically, and must in the end be cared for in a city or state hospital.

The city of Minneapolis is large enough to maintain a hospital for helpless and feeble cases. The present inactivity is a disgrace to any city of the size and reputed civilization of Minneapolis.

STATE RECIPROCITY IN THE RECOGNITION OF DIPLOMAS

The Inter-Lake Tribune, of Brown's Valley, in this state, has a long editorial on the subject of reciprocity among states in the recognition of diplomas granted by reputable schools of medicine, dentistry, education, etc. Mr. Gordon, the able editor of that journal, is unable to see why a teacher who graduates from a normal school in Wisconsin should not be allowed to teach in Minnesota without passing a very difficult examination, while a teacher who graduates from a normal school in Minnesota is permitted to teach here without any examination. Perhaps nobody else can see a reason, provided the schools are on a par with each other; and no one can see a reason why a physician who has passed a rigid examination in Minnesota should not be permitted to practice in North Dakota, if such examination is on a par with the examination required in North Dakota.

The Tribune calls such discrimination a rank form of the doctrine of state rights, which works injustice to the individual and to the state. We heartily agree with the Tribune, and we hope soon to see a change in public, or, rather, in professional sentiment in this state along this line.

Minnesota early took an advanced position in the requirements for graduation from our medical schools, and the requirements demanded by our medical practice act caused some of the oldest and best medical schools in the country to lengthen their courses. If the state would recognize certificates granted by other states upon condition that the requirements of the candidate were equal to our own, it is perfectly plain that any standard of requirement adopted by us would be followed by, at least, all northwestern states, and that a great benefit would be conferred on the public by raising the standard of such states; and we cannot see how any harm could come to this state through such a course.

We have enough respect for the medical men of North Dakota to believe them just as capable of examining a candidate for a certificate to practice medicine as the medical men of Minnesota; and therefore if we approve the list of questions submitted in North Dakota, why should we not accept the certificate granted?

We believe the time has come for Minnesota to take the lead in this important movement; and THE LANCET wishes to express its thanks to the Inter-Lake Tribune for taking up this subject and handling it so sensibly and logically.

THE PROFESSIONAL STEERER

In all of the large cities there exists a class of persons who make their living in part by diverting the pathway of the stranger. Sometimes the unsuspecting individual is buncoed in the most flagrant manner under the glare of the sun or arc-light; at other times he is guided into dark stairways and robbed; again, he is introduced to fakirs, who sell them cheap jewelry or cheap clothing. The well and strong do not need the lesson perhaps, but the poor or sick are the real sufferers.

The peculiar class of steerers who infest the depots and hotels are those who divert the sick, lame, and easily influenced invalid into other paths than those to which they were directed. The result is that the sick man or woman who is sent by a physician in the country to a physician or surgeon in the city, is approached by one of the steerers or "cappers," and is persuaded to see Dr. So-and-so, as a man infinitely better than the man to whom they were directed. The story of the capper is alluring and convincing, and is bolstered by the statement that Dr. So-and-so cured the capper of a similar disease or deformity. The patient is thus led astray, sometimes falling into good hands, but more frequently he is landed in the camp of the Philistines, and shorn and shaven to the quick. The capper is cunning and shrewd, and easily ascertains the sum total in the hands of the victim.

The capper in his dealing with his employer demands and receives his commission. His percentage is high, for his services are valuable. The higher the commission the more victims the employer receives, and thus the graft goes on.

This sort of thing is not limited by any means to the advertising fakir. It invades the ranks of respectability, men who occupy a prominent place in the profession and who outwardly scorn and scoff at such procedures.

The physician from the country is too hurried always to write a letter of introduction, and simply gives the name of the physician and the city in which he practices. To do away with the capper, and make his calling a failure the physician should write a letter, direct it clearly, and instruct his patient to deliver it in person, at the same time warning the patient against the professional steerer, and the advise of friends who know nothing of the circumstances.

For the large number of invalids who come into the cities uninformed or undirected who seek advise in medicine or surgery, nothing can be done; their fate lies in the capper, and a few acquaintances who know little or nothing of the profession. Conductors or trainmen are presumably instructed to direct strange invalids to hospitals or dispensaries where they may be reasonably certain to fall among more Samaritans than Philistines. The man who secretly employs a capper is unworthy of membership in the medical profession, and deserves, what he is sure to get, failure. The man who caters to a class likely to prove friendly cappers, men who are in a position to meet invalids from trains and about hotels, is doing his fellow man a gross injustice, and should mend his ways.

It is professional to enquire of a patient how the visit came about, and who sent him in. If it developes that another physician was recommended orally or by letter it is highly professional to direct the enquirer to the proper person; yet the temptation of the surgeon is great. Only the strong do their duty well. It is more honorable to practice medicine or surgery honestly than by gaining practice by underhanded methods. It pays in the end to be fair and square, even though practice and patients come slowly at first. Greater and safer gains come to the man of merit than to the man of intrigue. Eventually, the unfair man is detected and his deficiencies are heralded far and wide.

Get patients, but get them honorably.

CORRESPONDENCE

A VIENNA LETTER

Vienna, May 20, 1904.

EDITOR OF THE LANCET:

Vienna offers many attractions to medical men who go abroad. The work is nearly all centralized in the one general hospital, the Algemeine Krankenhaus of about 2,700 beds; and here, during the long years of its existence, has been built up the great name Vienna has for medicine.

The visiting physician has practically free access to the general clinics and clinical lectures. Nearly all the lectures given are clinical lectures. The purely didactic lecture is almost unknown. Great stress is laid on exactness and detail in diagnosis, and this is carried out with such painstaking faithfulness that it sometimes seems almost time-consuming. This systematic work for the general student body soon seems too slow for the visiting physician, and he looks about for some special courses. He finds that the professors at the heads of the departments rarely give special courses, and that he must be content with a course by one of the assistants. When he makes up his mind to take one or more of such courses he discovers so many men registered ahead of him, if the course is thought to be really a good one, that he must wait from a few weeks to six months before he can take the work. If he wishes some special work, sometimes he tries to get together enough men willing to take it, to induce some assistant to give such a course. Sometimes he succeeds and sometimes not.

There is here a medical society, The Anglo-American Medical Association, made up from all the English-speaking men over here for medical work. There is at present a membership of about sixty, and there are very few of them completely satisfied with the work they are able to do. It is the custom to have one member appointed to look after the interests of each department of medicine, so that, if a new man comes to Vienna and wants to know what work is being done here, say in surgery, he is referred to the member on surgery, who tells him who the surgeons are, where they work, and how to gain access to them, and in regard to courses, whether there are any offered, whether there is a place unfilled in any of them, or how many weeks or months it is likely to be before such a place will be open. For these reasons it is best for one who wishes to come over for work in the courses, to write to some friend who is here or to the secretary of the society. In this way he can find out what work is offered, and can have his name put down on the list for such courses as he may wish, so that he may take them when his name comes around in due order of rotation. From all this it may be seen that, except for certain special things, an American could do more work and see more work done in a given time in the hospitals and clinics of one of the large medical centres in the United States than here in Vienna.

At Vienna one is impressed with the small amount of operative work which the students are allowed to see. Most of the operations performed during my stay were done as semiprivate operations, accessible to some of the visiting physicians, but not to the medical students of the university. Among the visiting American physicians the German and Austrian surgeons have the name of being good diagnosticians and good pathologists, but not especially careful with their asepsis and not dexterious in their operations. To this rule there are some notable exceptions, of course, and one can look to see the list grow longer in the next few years because the German is thorough and painstaking, and his attention has been called to these questions. The Americans have seen so much brilliant operative work in their own clinics that they do not feel that work done in this branch of surgery by the Germans and Austrians is of a grade uniformly high enough to merit more than short visits of observation.

While in Vienna I followed some of the best surgical work done in the city, and a few of my personal impressions may not be without interest. Many of the operating-rooms seem to have been remodelled and equipped with modern appliances recently. The sterilizing plants are modern. Everything used is carefully sterilized before an operation. The operators and assistants seem to wash carefully before an operation, though occasionally one of the older operators forgets to maintain his condition afterwards. The instruments are inclined to be rather large and heavy, but that is not a serious objection. As a rule the work is slowly and carefully done. Large incisions do not seem objectionable to them, and not a great amount of consideration is given as to the place of a scar. The skin is apt to be brought together without exactness throughout the suture line. As a rule there is much flushing of the wounds before suturing.

In a few operating-rooms the assistants are well trained, and there is good team-work. In others they act as individuals, and do not work together toward smoothness and exactness in operating. Cotton gloves, frequently changed, is quite the rule in Vienna. Once only I saw rubber gloves used by an operator, and then for his own protection.

Prof. Eiselsberg is called the best operator in Vienna. He ranks with Miculicz and Kocher. He looks like an American, has iron-gray hair and short beard, seems 50 or 55, is well preserved, of medium build, active, quick in motion and in judgments. He is a man such as one grows fond of. He reminds one a little of McBurney of New York or of Mixter of Boston. He makes one feel that he is in an American operating-room save that the language is German. I think the operations he did which I most liked were his gastro-enterostomies and his goitres.

At Prof. Moorhop's clinic I saw some exceedingly encouraging work in bone surgery. For instance, tuberculosis of the foot, involving the astragalus and os calcis, with a discharging sinus, in a patient of about 35 years, was treated as follows: An incision was made across the whole front of the ankle through the normal tissues, including the tendons; the foot was turned down while the whole astragalus and the greater portion of the os calcis were removed; the cavity was dried with a hot-air blast; the diseased skin and tissues of the sinus were excised; the foot was turned back, the tendons sutured, and the cavity left by the removed portions of bone was filled with Moorhof's special preparation, which hardens at the body temperature, and the remaining soft parts were sutured over it with a short half-inch tube in place of the old sinus for possible drainage. The preparation is iodoform 30 per cent, oil of sesame 20 per cent, spermaceti 20 per cent.

I saw several joints operated in a similar way. Among them were two wrists in which all the carpal bones were removed, except the pisiform. Dr. Moorhof expects healing of the soft parts by first intention, and a gradual replacement of the bone filling by bone and connective-tissue formations. That he does get such results is shown by numerous *x*-ray plates of various cases taken at different stages of healing and, what is more to the point, several healed and healing cases were also shown. One morning some sixteen dressings were done on post-operative cases. Only one showed sepsis, and that was an unimportant stitch abscess.

I was very much interested in the paraffine injection work done by Dr. Gursoney, the man who is said to have introduced to the profession this method of raising the bridge of saddle-backed noses and of filling out depressions in the soft parts generally. He is a small, active man well along in years. He does a large general surgical practice as well as this special paraffine injection work. This procedure has taken a wide range, —from raising a slightly sunken cheek to submucous injections for incontinence of urine.

ARTHUR T. MANN, M. D.

NEWS ITEMS

Dr. E. R. Jellison has moved from Revere to Walnut Grove.

Dr. S. W. Carlson, Hamline, '01, died in St. Paul, June 3d.

Dr. A. G. Anderson, of this city, has moved to Hillsboro, N. D.

Dr. A. A. Whittemore has moved from Leeds, N. D., to White Earth, N. D.

Dr. E. L. Commons, of Lead City, S. D., has gone to Old Mexico to practice.

Dr. John P. Brastad, a recent Iowa graduate, has located at Washburn, N. D.

Dr. H. V. Magnussen, State University, class '03, has moved from Chisago City to Clinton.

Dr. L. W. Armstrong, of Breckenridge, was married last week to Miss Louise Hyer of that city.

Dr. George J. Tweedy, of Winona, was married, June 1st, to Miss Wilhelmina Gerth, of the same city.

Dr. H. L. Saylor, of Coggswell, N. D., will spend the summer in Chicago, doing post-graduate work.

Dr. B. J. Branton, of Minneapolis, has been appointed an assistant in the Budd Hospital, of Two Harbors.

Dr. H. Dean has left Isanti, where he has practiced about a year, and gone to the Red Lake country.

Dr. H. S. Fairall, of Northome, has located in Deer River.

Dr. M. M. Ghent, of the staff of the Rood Hospital, of Hibbing, has gone to Vienna for two years' study.

Dr. Charles J. Maercklein, of Le Roy, was married to Miss Mattie Every, of the same place, last month.

Dr. George Douglas Head, of this ctiy, has been elected secretary of the medical faculty of the State University.

The contract for the new addition to St. Francis' Hospital at Breckenridge has been let. The cost will exceed $40,000.

Dr. George H. Shrodes has decided to resume his old practice in Excelsior.

Dr. E. M. Meadows, of Oberon, N. D., will move to Oakes, in the same state.

Dr. Henry Fehr, of Lead City, S. D., has been offered a fine position in a Milwaukee hospital, and will probably accept it.

Dr. J. H. Herman, of Waubay, S. D., has moved to Webster in the same state, and formed a partnership with Dr. J. L. Harris.

Dr. D. B. Pritchard, of Winona, who lost a leg as the result of an accident, is now out of the hospital, and is rapidly improving.

Dr. H. J. Hutchinson, who has just graduated from the College of Physicians and Surgeons of Chicago, was drowned last month at Taylor's Falls.

Dr. K. Lee, who graduates from Johns Hopkins this month, will have charge of the practice of Dr. Lumley, of Renville, during the summer.

Dr. H. J. Forbes, a graduate of the University of Illinois, has located in Winnebago City. Dr. Forbes spent a year in the Emergency Hospital of Chicago.

Dr. R. J. Phelan, a graduate of the State University, who has been for the past year house physician of St. Mary's Hospital, of Duluth, has located in Waseca.

Dr. A. E. Benjamin, of this city, was honored by election to the office of president of the alumni association of the medical department of the State University.

Dr. S. H. Olson, of Duluth, has been appointed marine hospital surgeon for the port of Duluth, and will thus have charge of the examination of all immigrants.

Dr. C. F. Ewing, of Anoka, has sold his practice to Dr. George K. Hagaman, of St. Paul. Both are graduates of the State University. Dr. Ewing goes east for extended study.

The citizens of Rochester gave Dr. W. W. Mayo a banquet last month, and presented him a handsome loving cup in celebration of his 85th birthday. Dr. Mayo has been an honor to that beautiful city, the state of Minnesota, and the medical profession, and all rejoice to read of this recognition of his worth as a man.

The Freeborn County and Albert Lea District Medical Societies held a joint meeting last month, and united under the name of the former. The following were elected officers for the current year: President, Dr. A. C. Wedge; vice president, Dr. W. S. Palmer; secretary, Dr. G. A. Stevenson; treasurer, Dr. J. P. von Berg.

The annual meeting of the South Dakota State Medical Association took place at Aberdeen, and about 100 physicians were in attendance. The following were elected officers for the ensuing year: President, Dr. C. B. Mallery, of Aberdeen; vice-president, Dr. A. H. Bowen, of Deadwood; secretary-treasurer, Dr. Wm. Edwards, of Bowdle (elected last year for three years).

Dr. E. Stella Perrigo, the woman homeopathic physician of Pipestone, has been in North Dakota for a year holding down a claim. She was arrested on the charge of practicing medicine without a license, and she put up a fight that brought her no end of notoriety in Dakota. She claims that the arrest was spite-work, because she has performed a post-mortem in a murder case.

The North Dakota State Medical Society held its annual session in Fargo May 25 and 26. The attendance was large and the papers were the best read before this society in a number of years. The following were elected officers for the next year: President, Dr. James A. Rankin, Jamestown; vice-president, Dr. Paul Sorkness, Fargo; secretary, Dr. E. C. Wheeler, Fargo; treasurer, Dr. W. H. M. Phillips, Hope.

The Clinical Application of Ingluvin

Ingluvin is the name given to a preparation made from the gizzard of the domestic fowl. Since its introduction, no remedy of modern times has attracted more attention among physicians far and near nor received higher endorsement than Ingluvin, which is now supplied throughout the world. The product occurs in the form of a soft powder of a yellowish-gray color and a faint odor. It is almost devoid of taste. A slightly bitter after-taste is left, but this soon disappears. Ingluvin is insoluble in water and the usual menstrua. It can be administered, stirred into water or milk, or in tea, coffee, chocolate, wine, etc., if no therapeutical objection exists. Its feeble taste is easily disguised. Ingluvin is also put up by its manufacturers (Messrs. William R. Warner & Co.) in convenient 5 grain tablets. The dose of Ingluvin is from 5 to 20 grains. Spread upon bread and butter it may be conveniently administered to children. Ingluvin possesses the advantage of being compatible with alkalies.

As the gizzard contains no peptic glands, the undoubted efficacy of Ingluvin cannot depend upon the presence of a digestive ferment analogous to pepsin. It has been ascertained that its virtues reside in a peculiar bitter principle which enters into its composition. It is prescribed in the same manner, doses, and combinations as pepsin.

Ingluvin is prescribed in the vomiting of Pregnancy, Dyspepsia from Uterine Disease, Colic, vomiting caused by Alcoholism, and other digestive derangements. It is likewise beneficial in dyspepsia when produced by functional inactivity. It will promptly check the diarrhœa which is caused by indigestion. By reason of its influence upon the stomach and bowels, Ingluvin is capable of marked service in cases of cholera infantum and cholera morbus.

The evidence in favor of Ingluvin in all cases of gastric disturbance is overwhelmingly convincing as to its superior efficacy over pepsin, and its use should never be neglected in any case of gastric irritability, no matter what may be the cause.

From the preceding abridged account it will be seen that Ingluvin possesses an exceedingly important sphere of usefulness. Disorders of the alimentary canal exert such a widespread influence, they are so often linked with profound general disturbances, and they are so distressing in themselves, that any remedy which demonstrates its efficacy in regard to those affections should be warmly welcomed.

Sample and Recent Literature free on request.

WM. R. WARNER & CO.

MANUFACTURING PHARMACEUTISTS

Philadelphia New York Chicago New Orleans

SUPERIOR TO PEPSIN OF THE HOG

INGLUVIN A Powder—Prescribed in the same manner, and combinations as pepsin.

A SPECIFIC FOR VOMITING IN GESTATION, IN DOSES OF 10 to 20 GRAINS

NORTHWESTERN LANCET

A Semimonthly Medical Journal

VOL. XXIV JULY 1, 1904 No. 13

UTERINE CANCER

By C. A. Stewart, M. D.

DULUTH

As uterine cancer, in its nature and treatment, is governed by the same principles as if the disease had manifested itself in some other part of the body I will premise by formulating the following propositions as being of general application without regard to the location of the disease:

First, That both carcinoma and sarcoma are the result of perverted cell development.

Second, That the degree of malignancy shown by the disease, judging by the tendency to return after removal, varies greatly in different parts of the body and also in different individuals.

Third, That it is important to give close study to the pathology of malignant disease in each separate part of the body in which it occurs as an essential part of the equipment for diagnosis and prognosis, and

Fourth,.That all forms of malignant disease are essentially local in character in their earlier stages, and as such they may be successfully removed by operation unless the anatomical conditions contraindicate surgical measures.

As regards the first statement made, that cancer is the result of perverted cell growth, I state my conclusions after summing up the results of the latest researches upon the subject. These being that the cause is not definitely known, it leaves us at liberty to accept the theory that appeals to us as being the most logical.

There are, of course, individual differences of opinion among those who subscribe to the theory of cell perversion, one of the most satisfactory being that of Virchow, who claimed that the disease consists of a transformation of the connective-tissue cells, generally as the result of local irritation. Ribert thought that the epithelial cells separated from their connection without anaplasia, while Theirsch and Waldeyer regard the disease as the result of primary growth of the epithelium without change of the biologic properties of the epithelial cells.

All investigators agree that there is no distinctive cancer cell.

The theory has been advanced that the disease results from microörganisms, but up to the present time their existence has not been demonstrated, and the decided lack of analogy between the nature and course of malignant and infective processes renders, in my judgment, the discovery of a distince cancer germ very unlikely.

The fact that cancer sometimes develops in the abdominal walls at the site of the wound made in the performance of abdominal hysterectomy, has been cited as presumptive evidence of such parasitic power, but it should be remembered that in these cases it more likely results from the lodgement of living cancer cells upon a soil especially favorable for their development. I do not find a single instance on record of the disease having been communicated to another through the medium of a wound, although the surgeon not infrequently wounds himself while operating for cancer, while, on the other hand, cases of blood poisoning from wounds received during operations in cases of infectious disease are not at all uncommon.

The difference between the two conditions rests upon a biologic basis in that cancer originates and extends in the cells through a modification of cell growth, but no parasite has been isolated that is capable of reproducing the disease, while infection from germs results in the development of the same character of disease in a healthy wound in case they effect a lodgement upon the wound surface.

Another point of difference between malignant and infective disease, although it does not bear strictly upon the nature of the diseased processes, but may be regarded as a diagnostic point, is that the former in itself is not attended by a rise in the body temperature, while fever is an invariable accompaniment of infection.

The question of heredity has been considered an important factor in the causation of cancer, and it appears with good reason as life insurance companies continue to give the subject a very serious consideration.

I think that child-bearing exerts a decided influence upon the development of cancer in the cervix, and that it does so through the irritation excited by the scar which results from the healing of cervical lacerations. There is little question but that local irritation is a powerful determining influence in this disease. This is shown by the great frequency with which the portions of organs which are most exposed to irritation in the performance of their regular functions become affected. As instances I will mention the breast, the pylorus, the bile ducts, the cecum, and the rectum as portions of the body most frequently affected, and they are all exposed to more than the ordinary amount of irritation.

The degree of malignancy depends largely upon the part of the body in which the original outbreak occurs. If the part affected is rich in lymphatics there is a proportionately greater liability of their becoming involved than if the lymphatic supply is poor. This is exemplified in mammary cancer, a form of the disease in which, from the extensive lymphatic supply, we would expect a strong tendency to recurrence, and experience shows that such is the case. On the other hand we do not expect recurrence in an epithelioma of the lower lip, where the lymphatic vessels are few in number, and here also experience bears out our expectations.

So far as the pathology of the disease is concerned it seems that the practical benefit to be derived from its study accrues, not only in the aid it affords to diagnosis, but also in the knowledge it brings in regard to the extent and direction of lymphatic involvement to be expected, and its consequent bearing upon the prognosis and treatment. As an instance of the advantage afforded by a knowledge of the lymphatic supply in uterine cancer it has been generally accepted as a fact that the inguinal glands are not affected in this disease until it has extended to the vagina, but late investigation has shown that the lymphatics of the body of the uterus communicate with the inguinal glands through the lymph-vessels which accompany the round ligaments. This fact may prove of practical advantage in a case showing enlargement of the inguinal glands without demonstrable evidence that the vagina is implicated, as it affords presumptive evidence that the deeper and more inaccessible glands are not yet involved, and an operation for removal can be undertaken with better prospects of ultimate success.

Cancer of the cervix may originate either in the mucous membrane of the canal or on the vaginal portion of the cervix. If the origin is on the last named portion it usually begins as a papillary or fungous growth, and it may exist for months without showing any great tendency to spread until it reaches the posterior fornix, when the peri-uterine tissues rapidly become affected. If the disease begin in the canal the first indication is an infiltration of the mucous membrane which soon ulcerates and the subjacent and surrounding tissues become infiltrated and eroded. The morbid process may extend to the body of the organ before invading the surrounding tissues, and up to this time it remains local in character. There is also a nodular form, which may originate either in the canal or on the vaginal portion, although I think its favorite point of origin is at the os externum. These nodules increase in size, invading the tissues immediately adjacent until the whole organ may be involved. They rarely ulcerate until late in the course of the disease, although they are irritable and bleed easily.

Cancer of the body of the uterus begins as a rule in the mucous membrane, which ulcerates at an early stage of the disease, the ulceration being accompanied by hemorrhage, and the subsequent course is very similar to that of the disease when it originates in the canal of the cervix.

The incipient stage of uterine cancer affords no general symptoms that are distinctive. It is not until the neoplasm begins to break down that hemorrhage and offensive discharges begin to appear, though there is sometimes an irregular trace or spotting of blood previous to this time, due to the accompanying endometritis, and this is very likely to follow any local irritation. If the disease begins during the period of sexual activity menstruation is likely to be unduly prolonged. It it develops after the menopause bleedings occur at irregular intervals, and are generally prolonged but not profuse. Patients in this condition are inclined to regard the appearance as a return of menstruation, and to treat the matter with indifference at first, and so are not likely to get medical advice until the persistence of the condition compels their attention.

Pain is not met with in cases where the disease is confined to the uterus except when there is a co-existent peri-uterine inflammation. When the infiltration has extended to the broad ligaments and the pelvic connective tissue, however, there is backache, hypogastric pains, pain in the groins which radiate down the thighs, and there are evidences of pressure upon the bladder and rectum, which as the disease advances become more marked. Later on there is likely to be ulceration into the bladder, and the formation of a vesicovaginal fistula. The pressure of the infiltrated mass upon the rectum causes mechanical interference with defecation, and this adds greatly to the patient's suffering. Edema of the lower limbs will probably occur about this stage, either in consequence of the hydemic state of the blood or from thrombi in the veins. The patient's nutrition is poor, and a peculiar state of the skin develops, known as the cancerous cachexia. In many cases there is more or less pronounced uremia, due to pressure upon the ureters in their lower portion.

It thus appears that the diagnosis of the condition from the general symptoms in the early stage, when it is most amenable to treatment, is a matter of uncertainty. In many cases the beginning of the disease is so insidious that it is impossible to determine precisely when the morbid process began; in all cases, however, the occurrence of hemorrhage or of prolonged menstruation, or the return of the menstrual flow after the menopause has been passed, should be regarded as sufficient evidence of an abnormal condition to warrant an examination into the local conditions which exist, in order to explain the reason for the unusual symptoms.

Should the examination show a condition of erosion, and there is doubt as to its nature, remember that a distinctive feature between cancerous erosions and endometritis is that in the latter the normal mucous secretion is increased in amount and tenacity to a noticeable degree, while in cancerous degenerations the mucous secretion is absent and the discharge is serous in character. It is not offensive in the earlier stages, but as the disease advances it becomes yellowish, then brownish in color, and still later it becomes very dark, and as it grows darker the odor becomes more pronounced and disagreeable. In case of doubt as to the diagnosis it is proper to use the curette and subject the scrapings to miscroscopic examination, although if this be done I think it wise to operate soon afterward in case the specimens are pronounced cancerous, because curetting, like any other irritation, stimulates the growth of cancer and it is not wise to do anything which might add to the gravity of the patient's condition.

Assuming that cancer in its incipiency consists of a primary focus from which invasion of the surrounding tissues takes place, and that the disease may be cured by operation provided the whole of the affected area can be removed, the question arises as to how much involvement of the surrounding structures may exist, and still make an operation advisable.

A good general rule, I think, is to regard the prospects for a permanent cure as good if there is no evidence that the disease has extended beyond the limits of the uterus; and, beyond that, that the likelihood of recurrence is in proportion to the extent of infiltration of the broad ligaments and the connective tissue. In other words, the prospects for a permanent cure are good in direct proportion to our ability to carry dissection into healthy tissue, and thus completely ablate the diseased parts.

One of the features most relied on to settle the question as to whether the condition is operable or not is that of mobility of the uterus, as a fixed, immovable condition of the organ indicates that there is extensive infiltration of the surrounding tissues, and that the lymphatics of the pelvis are generally involved. An exception to this is when the uterus is fixed by co-existing inflammatory adhesions, and in doubtful cases it is well to examine the patient while anesthetized, in order to clear up the diagnosis, as under the relaxing influence of an anesthetic inflammatory conditions show some definite amount of elasticity, while cancerous infiltration is not affected by it, and tne pelvic contents remain as fixed and immovable as if they were imbedded in plaster of Paris.

Invasion of the vagina, bladder or rectum increases the prospect of recurrence of the disease, because with this extension there will be a great amount of lymphatic involvement.

On account of the prominence given to cancer of the cervix from the fact that most uterine cancers have their origin there, many operations have been devised to remove the diseased portion, and leave the body of the organ intact. Some form of amputation of the cervix was the method of operation most in vogue up to the last fifteen or eighteen years, but they have proven unsatistactory in their results because of the impossibility of the surgeon knowing to a certainty when the limit of the disease was passed, and many failures resulted from the too restricted limits of the amputation. Of the various methods practiced the only one deserving mention at the present time is that of Byrne, who uses the galvano or thermocautery at a red heat, and by burning around the vagina until he cuts it through and separates it from the cervix he is able to amputate at a higher level, and doing this together with the burning out of cancer nests and the modification of the tissues produced by the cautery, seems to show a smaller number of recurrences than do operations with the knife.

Of late years the general tendency of the profession is to make a complete removal of the uterus on account of the greater protection it affords against recurrence, while the operation itself is attended by no greater fatality than is a high amputation of the cervix. The purely sentimental reasons offered against removal of the entire organ are of not enough importance to receive serious consideration, as malignant disease of the uterus should bar without limitation any possible chance of future pregnancy, and the danger of recurrence after a resort to half-way measures is too great to justify their consideration.

When it is reasonably certain that the disease is confined to the uterus the operation should be made through the vagina as a matter of choice. If it has extended to the peri-uterine tissues, but is still considered operable, the abdominal route is preferable, on account of the increased facilities afforded to remove, not only the diseased adnexa, but also all the diseased glands and tissues that are adjacent.

My preference for vaginal hysterectomy in cases where the disease is limited, is for the reason that it is simpler of execution, there is less shock, better because more natural drainage, and consequently less risk to the patient in every way. The operation is comparatively easy of execution when the broad ligaments are not involved, otherwise the difficulties encountered in the way of removing the diseased tissues, in controlling hemorrhage, and in avoiding the ureters and bladder, are formidable in proportion to the extent of the infiltration.

The preparations for the operation are the same as for any vaginal operation: the patient is shaved, scrubbed, placed in the dorsal position, and an Edebohl's speculum or some other perineal retractor used to expose the cervix. The vagina is then thoroughly scrubbed with soap and water, and irrigated with a solution of lysol in a one-fourth of one per cent solution. The operation is begun by removing with a sharp curette all the sloughing and broken-down tissue, and the raw surface thus formed may be seared with the thermocautery, or, if practicable, the cavity made can be closed by strong silk sutures, which are left long and then made to serve as tractors during the succeeding steps of the operation. The cervix is drawn down and forward under the pubes, and an incision made in the posterior vaginal wall at least one-half inch from the cervix, which should extend one-half way around. This incision is extended upward until the peritoneum is opened to the extent of the vaginal wound, when the peritoneum should be stitched to the vaginal membrane by a continuous catgut suture. A strip of gauze is introduced into the wound with a tape or thread attachment, which is left in the vagina as a guide. This gauze protects the intestines and prevents their extrusion into the wound.

The cervix is then drawn backward, and the incision in the vaginal wall is continued around the cervix. The bladder is then carefully separated from the uterus until the vesico-uterine reflection of the peritoneum is reached, usually at a depth of one or one and one-half inches, when this is carefully opened and stitched to the vaginal wall by continuous suture. When this is done the operator is in position to determine the condition of the peri-uterine tissues, and decide whether the operation can be completed by the use of ligatures to tie off the broad ligaments, or whether they should be clamped by forceps before cutting them through.

My own preference is to use the ligatures whenever possible because it is in every way a more distinctly surgical procedure, and by their use the operation can be more definitely completed; the convalescence is shorter and more pleasant, and the after-results more satisfactory, as there are no sloughs to separate and extensive surfaces to cicatrize. If the broad ligaments are extensively involved they lose their elasticity, and the uterus cannot be drawn down enough to make ligation a certain protection against hemorrhage, and in this case it is better to clamp the ligaments with forceps. In the application of the forceps the first one applied on each side should compress the uterine artery, and then one or two more will be used on each side as is required—if two, the second one includes the broad ligament only, while the third one compresses the ovarian artery between the ovary and the pelvic wall.

It is better in all cases of malignant disease to remove the adnexa with the uterus when operating, for fear that they may have already become involved. In using the ligature the cervix is drawn well to one side, and a Kelly hysterectomy needle armed with a No. 3 catgut is passed through the broad ligament one-half inch or more from the uterus, and high enough to include the uterine artery. Great care should be used in placing the first ligature, or, if clamps are used, in applying the first forceps, to avoid the ureters. After tying the ligature the ends are left long, and are held out of the way, and the broad ligament is then cut through, leaving a stump at least one-third of an inch long below the ligature.

The uterus is then pulled to the opposite side, and the same steps repeated, when the organ can be pulled lower and another ligature passed and tied upon each side, and the included portion of the broad ligament cut through. After the second ligature is tied and the broad ligament cut on each side, the uterus can generally be drawn down so that the next ligature will include the remainder of the broad ligament. If not, the fundus may be caught with a blunt hook, and the uterus completely anteverted or retroverted, preferably the former, as then the cancerous cervix is drawn back and rests in contact with the gauze instead of the healthy tissues. This procedure folds the remainder of the broad ligament upon itself, facilitating ligation, which should be done near enough to the pelvis to permit the removal of the ovary and tube with the uterus; then, after ligation, by cutting through the remaining portion of the broad ligament liberation of the uterus and adnexa is accomplished. The gauze is then removed, irrigation is used if necessary, and the long ends of the ligaments brought down, and it will then be possible to pass stitches through the posterior and anterior margins of the vaginal wound, which will include the ends of the broad ligament between them, thus accomplishing two desirable features at once, keeping the cut ends of the ligaments within the range of easy accessibility in case of bleeding; and by bringing peritoneal surfaces in contact throughout prompt union is assured, and a definite support is provided for the abdominal viscera. It is well to insert a small strip of gauze into the middle of the wound for drainage, and the vagina is then lightly packed with gauze and the operation is complete. The gauze drain may be removed at the end of forty-eight hours. If clamps are used the wound is packed with gauze, either plain or iodoform, in the spaces between the blades of the forceps. At the end of forty-eight hours the gauze is removed, and the forceps loosened, when, if bleeding occurs, they are immediately reclamped and allowed to remain for twenty-four hours longer. If no hemorrhage occurs the forceps are carefully removed and the wound lightly repacked with gauze.

An instrument called the angiotribe has been used by some operators of late years to control the bleeding by forcibly crushing the broad ligaments and the vessels they contain. Those who have used it speak favorably of it, but I have had no experience with it, and consequently have no opinion to express.

Should the disease be so far advanced that vaginal hysterectomy is inexpedient, or if the vagina be so narrow and contracted that the operation is too difficult, abdominal hysterectomy is done instead. In this method I think it is best to begin by curetting away all the broken-down tissues, and closing the cavity made in the cervix the same as in the vaginal operation, and some operators proceed to separate the vagina from the cervix as the next step. The advantage in doing this is that the last steps of the operation are expedited, and there is much less risk of the affected portion of the cervix coming in contact with the healthy wound surface.

Presuming that the ordinary preparatory steps have been taken, the patient is placed in the Trendelenberg position, and an incision made from one-half inch above the pubes to the umbilicus. The intestines are pushed toward the diaphragm, and walled off with gauze. The broad ligament is then ligated in sections external to the ovary on each side, and cut through as it is tied off. Great care should be taken to avoid the ureters when the lower ligatures are tied, especially if there be much infiltration, as in this case they will be hard to locate. If the vaginal attachments have been cut through from below, the uterus is freed as soon as the broad ligaments are cut through; if not, the peritoneal covering of the uterus is severed by a transverse incision across the anterior surface of the organ just above the reflection over the bladder. This flap of peritoneum is pushed down, and at the same time the bladder is separated from the uterus. The forefinger is then passed to the bottom of the wound, and the uterine artery located and ligated together with the remaining portion of the broad ligament, which is then cut through and the uterus is brought out of the wound by traction with a double tenaculum, and an incision made into the posterior vaginal fornix. This incision is extended on around the cervix after drawing the fundus out of the way, taking constant care not to injure the bladder or the ureters. Every bleeding point is now sought for and controlled, and the peritoneum closed as far as possible with the catgut. The vagina is lightly packed with gauze from above, and the abdomen closed in the usual manner.

In advanced cases of the disease it is often necessary to modify the method of operating to suit the varying conditions found.

Kelly lays stress upon certain steps in the operation that he considers of importance. Among those not included in my description are catheterization of the ureters, ligation of the uterine arteries close to their origin from the internal iliac arteries, and the removal of all enlarged glands found in the pelvis, in some cases slitting the posterior peritoneum and dissecting out the iliac glands as far up as the bifurcation of the aorta, and of course every particle of tissue that shows any indication of infiltration is removed.

There are other methods of operating than the two I have described in detail, one being a modification of the Kraske or sacral operation, but they are not frequently practiced, and I mention them to show that they have received notice.

I wish now to speak of those cases which have progressed too far to allow any operation for the cure of the condition to be made with any prospect of success. Unfortunately we see very many of these, and while there is nothing we can do that is of permanent benefit, there is much which may be done that will add to the comfort of the sufferer, and even in some instances to make existence endurable. The three conditions which will demand our attention in these cases are pain, hemorrhage, and the offensive discharges, and these will prevail in some degree in every case.

In some cases pressure upon the bladder and rectum will cause so much functional distress in the way of frequent desire to urinate and constipation as to require especial effort for their relief. The one remedy for pain in these cases is some one or other of the preparations of opium, which may be given either by rectal or vaginal suppository by preference on account of the increased local effect in comparison with the general effects produced by the drug. Later on in the disease morphia may be given by the hypodermatic method, beginning with small doses and gradually increasing as it becomes necessary. One thing should be borne in mind in the treatment of these cases, and that is that they are entitled to as complete relief from pain as they can be given. We cannot cure, and should refrain from holding out any promise or expectation of a cure, but we can and should do the other part of our work in soothing, encouraging, and in alleviating, so far as lies in our power, the suffering, mental and physical, which attends incurable disease. Cases of this kind are the constant prey of irregulars and pretenders of all sorts, who gain their confidence and patronage by making specious promises, and through ignorance or cupidity, or both, hold out prospects of recovery, and who essay an almost infinite variety of methods of treatment that are not only futile, but are often harmful and painful to a great degree.

I think it as much a part of our duty to protect a patient from falling into the hands of one of this class as it is to essay a cure in a curable one, but to do this you must maintain your interest in them and take care not to let them know how little the future has in store for them. Hemorrhage, as a rule, is the result of ulceration and may generally be controlled by the local use of an astringent, such as Monsel's solution, or a solution of alum or of adrenalin. In some cases it will be of benefit to scrape away with a sharp curette all the growth that shows a tendency to slough, and then sear the surface thoroughly with the thermocautery. This procedure not only checks the bleeding, but it stops absorption from the ulcerated surface, and it is followed by an almost immediate improvement in the general strength and nutrition of the patient.

The fetor of the discharges can be modified by the use of douches medicated with permanganate of potassium, creolin or any of the deodorizers in common use. The acridity of the discharge often causes excorations of the healthy parts, which may be modified by the use of an ointment that will coat over the surface and afford mechanical protection.

I have said nothing about the various methods of treatment that have been suggested for the sure of inoperable cases, as my object in writing this paper is not to enter into a discussion of this phase of the question, but, on the contrary, is to emphasize the importance of early diagnosis and prompt operation, before the case has arrived at the inoperable or even the questionable stage, for it is at this time in the course of the disease that real benefit accrues to the patient, and, besides this, an operation made at this time does not bring the profession of surgery into disrepute.

A STUDY OF THE EFFECT OF BORAX AND BORIC ACID ON THE HUMAN BODY, WITH PARTICULAR REFERENCE TO THEIR USE AS FOOD PRESERVATIVES

By Charles F. Dight, M. D.

Professor of Physiology in the Minneapolis College of Physicians and Surgeons. Formerly Professor of Practice of Medicine and Hygiene in the American Medical College, Beirut, Syria, and Attending Physician to Prussian Hospital at Beirut.

MINNEAPOLIS

IN TWO PARTS—PART II.

We have now followed and studied the effect of borax and boric acid from their introduction into the stomach and intestinal canal, until they have been taken into and mingled with the blood, and have been distributed to the cells of the body generally, without finding any effect exerted that would condemn their use as food preservatives. It is well known that they exert no specific action on any group of cells, muscle, nerve, secretory or connective tissue cells. They are not irritants in moderate amounts, as shown in the preceding pages; they do not produce pathological congestion, and any effect they might exert would be looked for in those organs which encounter them in largest amounts, viz.: the liver and kidneys.

The study of the action of borax on these organs, and also the further study of its action on the stomach and intestines, and on nutrition generally, will now be considered in connection with guinea pigs, to which I have fed borax.

INVESTIGATION OF THE EFFECT OF BORAX ON GUINEA PIGS

These investigations consisted:

1st. In the daily administration of a known quantity of borax to the pigs for 84 days, and weighing them every seventh day on the same hours and under like conditions of feed, to detect any gain or loss in weight.

2nd. A count of the red and white blood corpuscles of the pigs.

3rd. A post-mortem examination of their viscera.

4th. Chemical examination for the presence of borax in the blood and viscera of the pigs.

5th. Microscopic examination for structural change in their stomach, intestine, kidneys and liver.

1. The Borax Feeding Experiment: In these experiments I used nine pigs, numbered off into two groups as nearly alike as possible in age, weight and conditions of health, and all were males except two. Both groups were placed under the same good conditions of air, light, housing and care. They were all fed an abundance of the same kinds of food, but to one group I fed each morning a dose of borax in wheat bran, and to the others no borax, the latter pigs being kept for comparison with the borax fed ones, and to check errors in conclusions. Each pig while eating its borax was placed in a stall by itself so that each got its own dose; at other times they all, excluding the two females, ran and fed together. The feeding began with doses proportioned to the weight of each pig, which avoided the error of giving to each the same sized dose, irrespective of its weight. Each pig, therefore, took a different sized dose, and rather than deal with its amount, it will be clearer to state what that dose would be equivalent to in man.

During the first 14 days each borax fed pig took a dose which, in proportion to its weight, which had been previously estimated, was the equivalent of two grains to the average adult man, weighing 67 kilogrammes, or about 147.5 pounds. During the next 21 days this initial dose was increased ten-fold, or to the equivalent of 20 grains daily to man. During the next 14 days it was increased fifty-fold, or to the equivalent of 100 grains; and again increased for the next 14 days one hundred fold, or to the equivalent of 200 grains to man; and for the next 21 days it was increased two hundred fold, or to the equivalent of 400 grains to man daily. These doses, as the pigs became heavier, would fall somewhat

WEIGHT OF GUINEA PIGS IN GRAMS, TAKEN EVERY 7th DAY.

The following table shows the weight of the Guinea Pigs on Sept. 28th at the beginning of, during, and at the end of the 84 days feeding process: the weight which each gained, and the quantity of borax which the dose would be the equivalent of to man

DATE 1901	DOSE	BORAX FED PIGS					NON-BORAX FED PIGS			
		Pig 1	Pig 2	Pig 3	Pig 4	Pig 5	Pig 6	Pig 7	Pig 8	Pig 9
Sep. 28th to Oct. 12th. 14 days.	Inititial dose equal to 1.3 decigm. (2 grains) for man.	174.51 220.70 259.08	402.76 442.81 480.72	327.03 379.43 445.63	349.80 398.5 438.79	417.84 478.26 534.2	320.33 348.35 396.4	193.91 247.42 300.68	429.31 483.07 514.08	705.9 728.39 745.85
Oct. 12th to Nov. 2nd. 21 days.	Initial dose increased 10 fold, equal to 1.3 grams. (20 grains) for man.	302.73 354.75 402.66	507.18 538.19 554.7	486.86 516.2 559.51	485.06 512.51 553.80	553.17 575.96 568.77	474.02 518.64 564.30	345.9 395.28 452.04	507.18 552.26 566.48	786.05 746.32 820.85
Nov. 2nd to Nov. 16th. 14 days.	Initial dose increased 50 fold, equal to 6.5 grams. (100 grains) for man.	436.58 468.56	578.41 614.58	608.81 625.08	586.59 623.13	526.02 548.38	601.27 618.97	480.53 532.72	577.74 600.00	892.2 858.2
Nov. 16th to Nov. 30th. 14 days.	Initial dose increased 100 fold, equal to 13 grams. (200 grains) for man.	513.28 551.03	638.21 641.8	665.83 698.15	656.66 698.49	542.27 576.25	672.18 685.55	588.63 625.86	618.47 628.49	923.29 911.96
Nov. 30th to Dec. 21st. 21 days.	Initial dose increased 200 fold, equal to 26 gms. (400 grains) for man.	586.19 587.31 611.47	644.52 632.32 626.05	718.00 696.11 723.49	711.77 708.54 708.7	563.88 493.37 455.45	710.32 711.19 732.7	665.91 650.87 678.18	629.94 611.63 621.08	935.99 916.24 903.61
In 84 days the pigs gained......		436.96	223.29	396.46	358.81	37.61	412.37	484.27	191.77	197.71

The following shows in condensed form the gain in weight during each period on the different doses. +indicates gain. −indicates loss.

	Pig 1	Pig 2	Pig 3	Pig 4	Pig 5	Pig 6	Pig 7	Pig 8	Pig 9
On Initial Dose	+ 84.57	+ 77.96	+118.60	+ 88.90	+116.36	+ 76.07	+106.77	+ 84.77	+ 39.95
On 10 fold " "	+143.58	+ 73.98	+118.83	+115.01	+ 34.57	+167.9	+151.38	+ 52.40	+ 75.00
On 50 " " "	+ 65.90	+ 59.88	+ 65.57	+ 69.33	− 20.30	+ 54.67	+ 80.68	+ 33.52	+ 37.35
On 100 " " "	+ 82.47	+ 27.23	+ 73.07	+ 75.36	+ 27.87	+ 66.58	+ 93.14	+ 28.49	+ 53.76
On 200 " " "	+ 60.44	− 15.75	+ 25.34	+ 10.21	−120.8	+ 47.15	+ 52.22	− 7.41	− 8.85

below these equivalents for man, although they were exactly this at the beginning.

(See table opposite this page.)

It will be seen from the above table that while the pigs gained most while taking the smaller doses, it was at this period also that the non borax fed pigs gained most, which in both groups was no doubt due to the fact that the pigs were then younger and naturally growing more rapidly. Later on in the feeding period, with larger doses, the borax fed pigs gained less rapidly; so did the non borax fed pigs, and to about the same degree; and the loss of weight in the two borax fed pigs, No. 2 and No. 5, near the close of the feeding, cannot be attributed to the borax, for two non-borax fed ones, No. 8 and 9, at this time likewise lost weight. Excluding this brief period the pigs gained steadily, even on the larger doses. Thus pig No. 1 on the initial dose gained 84.57 grams in 14 days, and on 100 times this dose gained 82.47 grams in 14 days. Pig No. 3 on fifty fold initial dose gained 65.57 grams in 14 days, and on 100 times this dose gained 73.07 grams in 14 days. Pig No. 4 on fifty-fold initial dose gained 69.33 grams in 14 days, and on 100 times this dose gained 75.36 grams in 14 days. Pig No. 5 on fifty fold initial dose lost 20.39 grams in 14 days, and on 100 times this dose gained 27.87 grams in 14 days, which gain it seems unlikely it would have made if the borax in smaller doses was the cause of its previous temporary loss in weight. In case of chronic poisoning from any substance we do not expect improvement in the sufferer's condition by doubling the amount of poison in the system, and it seems likely the slight loss of weight in this or other pigs near the end of the feeding process was from other cause than the borax.

That the borax did not harm the pigs, and that their nutrition was not impaired, is indicated by their large total gain in weight, and by the fact that they looked as sleek, ate as well, were as active and seemed in as perfect health as those that took no borax.

Now, it is claimed that borax or boric acid, one or the other, in some way or another, unknown even to the one who claims it, have no effect to increase proteid metabolism. That is, they act on the proteids or nitrogenous ingredients of the tissues to "increase breaking down of that tissue and in consequence the output of nitrogenous waste matter." This, of course, means loss in weight by too rapid disintegration of the proteid materials of the body. This claim is disproved for borax by the rapid gain in weight of the borax fed pig.

Or, if it be urged that the gain was not a healthy gain and consisted of fat, that also is disproved by the post-mortem and microscopic examination that was made, which showed no abnormal increase of fat; and a long continued process of feeding followed by after death examination, is perhaps as well adapted to determine the matter of proteid metabolism under the administration of any substance, as is that other process of weighing for a few days the animals' nitrogenous intake and output, which latter is always contingent upon change in surrounding conditions, in the animal's health and in the activity of the multitude of goblet cells of the intestinal canal, which furnish much of the proteid in the intestinal discharges. But by this latter method also F. W. Tunnicliffe, of London, and Chittenden, of Yale University, and other observers have found that borax and boric acid in any reasonable quantity do not increase proteid disintegration. Tunnicliffe found this the case in three children between two and a half and five years of age, to whom he gave 1.5 grams of borax and 1 gram of boric acid daily, and under it the children all increased in weight; while Cyon found that daily doses of 3 drachms of borax increased appetite and digestion in dogs without causing other effects, unless it be gain in weight.

2. Count of the Red and White Blood Corpuscles of the Pigs: This blood count I made on the last three of the 84 days during which the pigs took borax, and when we would expect the full results of its continued use to have been reached in affecting nutrition, and the number of the blood corpuscles, if it would at all do so. That it did not is indicated by comparing the number of corpuscles in the blood of the borax fed pigs with the number in the blood of those that took no borax, and also with the number in man's blood, which, for a male adult, is estimated at 5,000,000 red, and 10,000 white corpuscles in a cubic millimeter of blood.

The blood of borax fed

Pig No. 1 contained 6,296,000 red and 16,650 white corpuscles per cubic millimeter.

Pig No. 2 contained 5,168,000 red and 12,000 white corpuscles per cubic millimeter.

Pig No. 3 contained 6,144,000 red and 13,000 white corpuscles per cubic millimeter.

Pig No. 4 contained 4,632,000 red and 7,500 white corpuscles per cubic millimeter.

Pig No. 5 contained 4,904,000 red and 11,000 white corpuscles per cubic millimeter.

The blood of non-borax fed

Pig No. 6 contained 5,420,000 red and 9,500 white corpuscles per cubic millimeter.

Pig No. 7 contained 6,064,000 red and 20,000 white corpuscles per cubic millimeter.

Pig No. 8 contained 6,088,000 red and 15,000 white corpuscles per cubic millimeter.

Pig No. 9 contained 5,527,180 red and 16,200 white corpuscles per cubic millimeter.

Of all the pigs the one whose blood contained the most red corpuscles was one that had been fed borax—pig No. 1. The pig whose blood had the least red corpuscles was also a borax fed pig—pig No. 4. But this pig, during the whole experiment, had put on weight and presented the appearance of being in perfect health, and post mortem examination of it a few days later showed its organs in a healthy state.

I observed the pigs daily, and the only one about whose health there could be a question was Pig No. 5, for the reason that late in the feeding it lost considerable weight, yet its blood contained more corpuscles than Pig No. 4, than which there was none more healthy.

The number of red corpuscles in a given quantity of blood is not the same in all persons, and is subject to considerable variation, even in health, and no doubt this is true of the guinea pig. In all the borax fed pigs the number of corpuscles were well within the normal range, from which and the healthy gain in weight, we must conclude, in the absence of evidence to the contrary, that their nutrition was not impaired.

There is nothing which the cells of the whole body require so constantly as an abundant supply of oxygen. It is at the foundation of all changes, whether constructive or destructive in our tissues. The blood corpuscles are the carriers of this oxygen from the lungs to the cells everywhere. There must be enough corpuscles to perform this service, else nutrition is impaired. That normal nutrition, evidence of which was seen in the rapid growth and healthy condition of the pigs, was itself evidence of an ample number of red corpuscles, and the blood count showed their presence.

3. Post-mortem Examination of the Viscera of the Pigs: This examination was made following the blood count, and in the borax fed pigs, No. 1, No. 2, No. 3, No. 4, nothing pathological was found; comparison being made of their viscera with the viscera of healthy non-borax fed pigs posted at the same time. The mucous membrane of the stomach of those whose stomachs were empty, was pale and in rugæ, while the bright redness of a physiological congestion was seen in those whose stomachs contained food. There was no evidence of chronic inflammation of the gastro-intestinal mucous membrane. The mesenteric glands were not enlarged and the bladder was not diseased. Their livers and kidneys were normal, and on sections of the latter, their cortical and medullary substance showed distinct. The blood of all coagulated in from two to five minutes after escaping from their vessels, indicating an ample quantity of the fibrin-forming ingredients; while the blood serum from the one from which enough could be collected to apply tests to, contained abundance of the other proteids of the blood;—the paraglobulin forming a heavy precipitate on saturation with magnesium sulphate, while in the filtrate the serum albumen formed a heavy coagulum on heating. In Pig No. 5, borax fed, the right kidney was larger than the left one and both presented linear depressions extending part way around them, giving them a somewhat lobulated appearance, which suggested the possibility of cirrhosis. On cutting and laying them open, however, no cirrhotic condition was visible to naked eye observation (and microscopic examination later revealed none), while both the cortical and medullary substance showed distinct and natural as in the kidneys of the other pigs, both those that had and that had not taken borax.

A lobulated form of kidney is often met with as natural in many lower animals, and exists in man in fœtal life and up to the time of birth, and in some cases traces of it remain permanent. In the absence of any diseased condition I regard this lobulated appearance of no significance in this pig, but simply a more or less continued rudimental condition. That it was such is further suggested by the fact that in a radiating section of the kidney from a papilla outward, the tract corresponding to the surface depression and division between the kidney lobes, was seen under microscopic examination to have more connective tissue, and to have its tubules more widely separated than elsewhere; and this wider separation of the tubules from each other by an abundance of connective tissue, is a characteristic of the fœtal kidney. (Human Embryology, C. S. Minot, 1897, 513.) Post mortem examination then revealed no pathological condition in the pigs.

4. Test for Borax (Boric Acid) in the Blood and Viscera of the Pigs: That borax is not cumulative in the system, seems evident from the fact of its free solubility in the blood and from the fact that soon after its administration its elimination from the kidneys begins and progresses so rapidly that in 24 to 36 hours after its administration its elimination, as stated by competent observers, is practically completed. I found no positive evidence of borax in the urine after three days following its administration in quantities of 3 grams, its excretion having begun in ten minutes after its ingestion, as indicated by its presence in the urine. Yet the statement is repetedly made, evidently without sufficient supporting evidence, that it is cumulative. If it were so, it would seem it should have been found in the blood and viscera of these pigs that took borax for 84 days, and during the last three weeks of this time in quantities equivalent to about 400 grains per day for man. Within 48 hours after the last borax feed was given those pigs, No. 1 and No. 5 were killed, and their blood collected and chemically examined for boric acid,

without finding evidence of its presence. Neither was found in the liver, spleen or kidneys of the other borax fed pigs. Pig No. 5 was the one that gained least in weight; pig No. 4 gave the lowest blood count, and in these which would be the ones most likely to show its accumulation, not a trace was found.

5. Microscopic Examination for Structural Change in the Viscera of the Pigs: For this examination the tissues were prepared in the usual way. They were injected to color the vessels, but through the process of fixation and hardening, were imbedded in paraffin, sectioned on a microtome, stained and mounted in balsam and examined. This was done with the liver, kidneys, stomach and intestines of pigs No. 1, No. 5 and No. 8, these organs being the ones which would encounter the borax in largest volume and therefore most likely to show any effect it might exert.

The stomach and intestines presented no morbid change in the structure of their mucous membrane or other tunics. The peptic glands, which secrete gastric juice, were seen to pursue their wavy course through the entire thickness of the mucous membrane, and the glandular epithelial cells of these and the pyloric glands showed normal. The epithelial covering of the intestinal villi was intact and without suggestion of any destruction of it, and the same was true of the glandular cells of the intestinal canal.

The liver of none of these pigs presented any structural change. The polyhedral liver cells showed normal, with their round nuclei placed centrally, and granular cell protoplasm. In the center of the lobules the intralobular vein showed clear, and into it the capillaries were seen to converge. There was no hyperplasia of the connective tissue between the lobules or elsewhere.

In the kidneys there was no evidence of any degeneration or other morbid change in the excreting cells of the uriniferous tubules. They were well formed and rested directly upon their thin basement membrane, and their normally placed nuclei were dictinctly shown with a carmine stain. The tufts of vessels (Malpighian tufts, the filter proper of the kidneys) placed at the expanded beginnings of the uriniferous tubules, were seen in their normal convoluted condition. The sack wall (Bowman's capsule) surrounding the tufts and the membrane covering them was not thickened, and the nuclei of the large, flat epithelial cells which line the interior of these sacks and the outer surface of the vascular tufts, showed normal. There was no visible hyperplasia of the interstitial connective tissue.

In none of these more susceptible parts of the liver and kidney, the stomach and intestines, or elsewhere in them, was there found evidence of disease.

BORAX DOES NOT PREVENT THE DETECTION OF PUTREFACTION BY THE SENSE OF SMELL

It has been asserted by persons opposed to the use of borax as a meat preservative that it covers up the odors of putrefaction so that they cannot be detected in the ordinary way,—that is, by the sense of smell.

This assertion is based, so far as I can learn, upon a single experiment made for the express purpose of sustaining this claim, the experiment itself having been conducted in an incubator and under unnatural conditions of temperature. That this charge against borax is not true would be inferred from the well known mild chemical properties of borax, as compared with the active oxidizing, deoxidizing or other chemical actions of our well known deodorants, such as peroxide of hydrogen, chlorine, sulphurous anhydride, charcoal, quick lime and others. That this charge against borax is absolutely false, will, I believe, be clearly apparent to anyone who will take the trouble to investigate the matter. I have made a series of experiments to determine the deodorizing properties of borax and also of boric acid when used in meat."[11] These experiments demonstrate that when they are used in quantities as great as 10 per cent of the weight of the putrefying meat both in chopped and in chunk meat, they absolutely fail, so far as the sense of smell can detect, to remove the offensive odor due to putrefaction, and the sense of smell is the most reliable means in every day life in determining whether or not meat is sweet or putrefied. Borax, therefore, does not, as has been charged against it, cover up the odors of putrefaction in meat so that the consumer of it "is unable to detect putrefaction by the ordinary method—that is, by the smell." Neither does boric acid do this; and no amount of borax or boric acid will restore to a fresh condition meat already tainted by putrefaction, and for this purpose they never should be used. They absolutely fail, also, to prevent the further progress of putrefaction when

---

(11) I took a quantity of fresh meat from an ox just slaughtered, and chopped it fine with sterilized instruments, and weighed it out in portions of 50 grams each, and left them exposed to the atmosphere until putrefaction had begun and advanced to a degree to be detected by the sense of smell. Chunks of meat, weighing 50 grams, from this ox, were also left exposed to the air until putrefactive odors were detected, which occurred in the different samples in from 26 to 40 hours. At the end of this period I added to some samples borax, to others boric acid, to the amount of 10 per cent of the weight of the meat and intimately mixed them by grinding in a mortar. To some of the chunk samples I added borax in saturated solution in water to insure its penetrating deeply into the meat. Other chunk samples I rolled in the powdered borax and boric acid. No perceptible deodorirzation resulted in any one case. The offensive odor steadily increased, indicating that the putrefactive process that had begun was not checked, and in a few days I threw the samples away because of their offensive odor.

To samples of chopped pork sausage in which putrefaction had begun, I have also added 4 per cent and 1 per cent of borax, with no perceptible effect in deodorizing or preventing further progress of the putrefactive process.

that process has once begun, but when used on fresh meat, when it is in a condition fit for food, and free from putrefaction, they postpone the occurrence of that process.

CONCLUSIONS

Now, the decisive test of anything is in the trial of it. The test of borax and boric acid, as made by various feeding and other experiments followed up by after-death examination, and these supplemented by the therapeutic use of borax and boric acid, give answer with the fullest certainty as to their effect in moderate amounts upon the animal body, and justify the following conclusions:

1. That borax exerts no specific action upon the animal body.
2. That any effect it exerts is because of and by virtue of its mild alkalinity.
3. That the sum total of its effects upon digestion is not harmful.
4. That it exerts no ill effect upon the ingredients of the blood.
5. That it does not act as an irritant to the tissues generally or locally, nor cause pathological congestions.
6. That by its use nutrition is not impaired.
7. That it does not increase proteid metabolism.
8. That it is not cumulative within the body.
9. That borax in moderate amount, 2 grams or more daily, exerts no ill effects upon the adult body.
10. That in proportion of 0.5 per cent it preserves fresh, sweet meat from putrefaction for long periods of time extending into months; while smaller quantities, even to 0.1 per cent or less, have been shown in practical use to preserve for periods of less duration.
11. That putrefaction once begun is not arrested by it nor its further progress checked.
12. That it is not a deodorant, removing from or concealing in putrefying meat, its offensive odor.
13. That all this is true of boric acid, also, except that any effect it exerts is by virtue of its mild acidity.
14. That boric acid may be taken in larger quantities than borax without harm.
15. That borax and boric acid, like anything naturally good, may become harmful when taken in excess.

THE HOSPITAL BULLETIN

ST. BARNABAS HOSPITAL

MINNEAPOLIS

Note.—In the absence of both the editor and the publisher when the last Lancet *went to* press, the matter supplied by St. Barnabas' Hospital for this department appeared under the wrong heading, being accidentally credited to the Northwestern Hospital.

A CASE OF ECTOPIC PREGNANCY, FETUS CONTINUING TO GROW THREE MONTHS AFTER RUPTURE

In the Service of Dr. F. A. Dunsmoor

Mrs. W——, a physician's daughter, 28 years of age, entered the hospital May 19, 1904. She had been married four years, but had never been pregnant. There was an indefinite history of pelvic inflammation in previous years. Menses regular. Some dysmenorrhea.

Present Illness.—Four months ago she first noticed an irregularity in her menses. The flow was somewhat interrupted, and decreased in amount. Two weeks later she was seized with intense pain in the right side. This gradually disappeared, and she felt comparatively well. Three weeks later, after attending a ball, she had a similar attack, which was relieved by rest and morphine. Two months later she had a third and more severe seizure. This time there were present all the signs of hemorrhage; nausea, lividity, prostration, etc. During this time she had menstruated regularly, but the flow had been diminished to about one-half the usual amount.

At this time I was first consulted by patient's father. Although I did not see the patient I immediately suspected an extra-uterine pregnancy, and advised that she be brought to the city and operated upon at once. Her condition improved, however, and she delayed coming.

Following the third attack the abdomen enlarged very rapidly until it became the size of a six months' pregnancy. One month later signs of hemorrhage were again present, and she was brought to the hospital.

Operation.—The right tube had apparently ruptured at the first attack. A fully developed fetus, six inches long, was found. The placenta was attached firmly to the omentum, so that the sac containing the fetus pushed the intestines and omentum above the umbilicus, and filled the entire lower half of the abdominal cavity. At the operation the hemorrhage, combined with the blood already lost, was very great, and the mass was removed as rapidly as possible. During the process the bladder was ruptured for an inch and a half in length. When the hemorrhage was controlled, the bladder was stitched with catgut in three layers. The patient was given hypodermoclyses and responded satisfactorily.

Her recovery was uninterrupted, and she was discharged from the hospital June 16th.

SOME NOTES ON A CASE OF CHRONIC DYSENTERY WITH AMEBÆ COLI IN THE STOOLS

In the Service of Drs. Geo. Douglas Head and Henry L. Ulrich

Henry C——, aged 38, white, not married.

Complaint, diarrhea.

Family History.—Negative.

Personal History.—Childhood, negative; rheumatism at 32; lame for several months, three attacks, the latter not so severe. Gonorrhea, 1903; has asthmatic attacks on inhaling fumes of grease. (Note.—For the last three years patient lived in Minneapolis. In November, 1903, he moved to Maple Lake, Itasca Co., Minn., where he lived on a farm. He was there two months when his diarrhea began. *He has never been South.* Water supply was from a dug well, ten feet deep. Has no special pets, or fondness for animals. Knows of no one in that district who has come from the South.)

Present Illness.—In January, 1904, at Maple Lake, patient had a sudden attack of diarrhea, which has continued up to date. Stools vary in number from 5 to 12 per day. In the beginning there was no pain in abdomen; no tenesmus, nor blood in the stools. Later these symptoms and signs developed. After two weeks of illness patient had to get up at night to defecate. He has had no fever (?), no chills, no sweats. Has lost his appetite, and is growing progressively weaker.

Physical Examination.—Patient is emaciated; short, but well built; mucous membranes good color; tongue not coated; skin sallow, suggesting anemia. Radials, sclerotic.

Thorax, good form; respiration, normal. Lungs, negative.

Heart, normal in size, sounds feeble, but distinct, no accentuated aortic second sound.

Abdomen, no distention. On palpation, slight resistance is felt; intestinal coils palpable; no tenderness; in left inguinal region descending colon indurated. (These signs have disappeared with rest in bed.) Temperature, 99.5°.

Rectal examination: On digital palpation an ulcer (?) is felt on anterior surface of bowel. Finger, when withdrawn, is covered with mucus.

Examination with speculum: Mucous membrane injected and small areas of ulcerations are seen .

Stools, dark color, foul-smelling, semi-solid, contain specks of mucus and reddish-tinged areas, evidently blood.

Microscopical examination shows amebæ in considerable quantities, red-blood cells, undigested particles of food, and bacteria. The amebæ vary in size, 20-40 microns, are actively motile, contain vacuoles, red-blood cells, and when stained (methylene-blue) show a nucleus.

Urine, negative.

Blood, June 8, 1904: R. B. C., 4,600,000; W. B. C., 12,500; Hgb., 85 per cent. June 13: W. B. C., 10,500; Hgb., 90 per cent. June 25: W. B. C., 9,625; Hgb., 98 per cent. Differential count: Polymorphous, 82 per cent; eosinophiles, 1.5 per cent; large monos., 3 per cent; small monos., 13 per cent.

Stools examined at intervals showed the same characteristics since the patient's entrance to hospital. At times there is a disappearance of blood, but amebæ have never been absent. Attempts at cultivation of the protozoon in sterile straw infusion have failed.

Since his inception, the rest in bed, diet, high rectal irrigation of quinine sulphate (1-2500) twice daily, bismuth subnitrate, ʒss., t. i. d., per mouth have brought down the number of stools to three a day. His general health has improved greatly. To Lösch (Virchow's Arch., 1875, No. 65, p. 196), we owe the classical description of this clinical entity. He successfully inoculated a dog with amebæ from his case. The dog showed no special discomfort, and at post morten areas of ulceration, and erythema of the mucous membrane of the lower bowel were noted. He concluded that the amebæ were secondary invaders which were able to keep up a local irritation with consequent symptoms of diarrhea. It is interesting to note that his case came from the Archangel Province, Russia, and that he had never been further south than St. Petersburg.

Kartulis (Virchow Arch., 1885, 99, p. 145) describes amebæ in patients suffering from Egyptian dysentery. Later he showed their relation to liver abscess. In this country Osler (1890), in Baltimore, Dock in Texas, and others in various sections of the United States, have reported cases. Amebæ coli are divided into ameba coli vulgaris, mitis, and dysenteriæ. Here the casts are an expression of the ennto amebæ coli vulgaries, mitis and dysenteriæ. The vulgaris and mitis types are present in normal stools. Mitis may be associated with dysentery found in temperate climates. Amebæ coli dysenteriæ is always associated with one form of tropical dysentery.

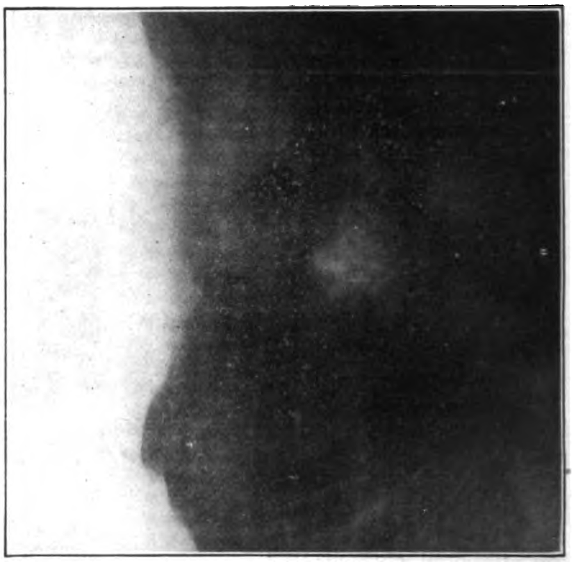
The protozoon seen in the stools in C——'s case correspond in biological characteristics to the A. coli dysenteriæ. Not until the amebæ can be successfully cultivated, and then only in pure form, will it be possible to ascertain their real etiological significance and geographical distribution.

Another interesting point is the differential blood count: One would suppose in parasitic invasion of the digestive tract associated with malnutrition, one would expect to find an increase of eosinophiles. This does not occur in this instance.

FOREIGN BODY IN THE POSTERIOR SEGMENT OF THE EYE-BALL, LOCALIZED MY MEANS OF THE X-RAY

In the Service of Dr. W. R. Murray

Patient, Willie L——, aged 10 years, was injured in the left eye May 28th by the explosion of a railway torpedo. A small pebble entered the eye through the outer-lower quadrant of the cornea, making a small wound, which quickly closed; the foreign body then passed through the base of the iris, and into the posterior segment of the eye. The anterior chamber was filled with blood. The piece of stone not being removable with the electromagnet and not being accessible for removal by means of the forceps, necessitated the removal of the contents of the globe. A Mule's operation was done, and a glass globe inserted.



The above skiagraph is shown as illustrating the value of the *x*-rays in determining the presence or absence of a foreign body within the eye. In this case the wound of entrance in the cornea was small, and had closed and the anterior chamber was filled with blood, preventing an opthalmoscopic examination of the posterior part of the eye.

With us (Americans) the temptation is too strong to regard two or three apparent successes as a final demonstration that X-ray will cure cancer.—Roswell Park.

CLINICAL MICROSCOPY

CONDUCTED BY GEORGE DOUGLAS HEAD, M. D.

HYALINE CASTS IN URINE

Scarcely a day passes that the question of the significance of hyaline casts in urine does not present itself to the general practitioner. The variety of opinions expressed by different authorities only serves to add to the difficulty. Some writers attach little or no importance to their presence in urine when unaccompanied by other elements more distinctive of kidney disease; others go so far as to say that hyaline casts always mean nephritis when found in urine. Such a difference of opinion exists, first, because there is no general agreement among pathologists as to just how far changes in a kidney must advance before the condition shall be called nephritis; secondly, because it is difficult to detect slight renal changes by the means at present at our command; and, thirdly, because nephritis is probably often simply a local condition involving only a few glomeruli or tubules, and the exact point of involvement cannot be determined unless systematic pathological study of the whole kidney is made.

There are doubtless many toxic influences, either chemical or bacteriological in origin, which profoundly affect renal epithelia, the presence of which we have no means of detecting pathologically. Such influences may be merely irritative, producing temporary congestion of blood vessels, or may cause mild degenerative changes in the renal epithelia.

It seems fair to conclude that normal healthy kidneys excrete a urine free from all kinds of casts. Dickinson has proven that excessive exercise in young persons (such as a severe football contest) will be followed by casts with or without albumen in a certain percentage of all persons so engaged. It is a well known fact that the urine of most persons over 60 years of age will contain an occasional hyaline cast. These facts, however, do not disprove the generally accepted conclusion that a normal kidney excretes cast-free urine.

Hyaline casts will be found occasionally in urines of high sp. gr. (1025-1035), with an increased quantity of urea and uric acid even though no albumen is present, and the patient is free from fever. Such urine states are usually seen in lithemia, oxaluria, phosphaturia, and allied conditions of faulty body metabolism. Here the presence of the casts indicates probably nothing more than an irritation of the renal epithelia, or a congestion of the kidney itself.

Hyaline casts will often be found in the urine of persons suffering from acute infections, la grippe, typhoid, measles, scarlet fever, pneumonia, etc., even though no albumen is present. Under such circumstances the hyaline casts are an expression of the effect on the kidney of some bacterial toxine circulating in the blood, or, the patient having suffered from a previous acute nephritis, the new infection has temporarily lighted up disturbance in the old areas of disease.

Hyaline casts are present with or without albumen in the urine of patients with chronic endocarditis, chronic myocarditis, chronic pericarditis, various lung and liver diseases, etc. Here the casts are an expression of the engorged condition of the kidney and result from a disturbance in its circulation (the kidney of passive congestion).

In this connection it must not be forgotten that in diseases associated with bile in the urine, hyaline casts are usually present, due probably to the irritating effect of the bile pigments upon the renal cells.

In acute or chronic parenchymatous nephritis hyaline casts are usually present, either alone or more commonly mixed with other casts and cellular elements. In these diseases the hyaline casts are often the first to appear, and the last to disappear from the urine.

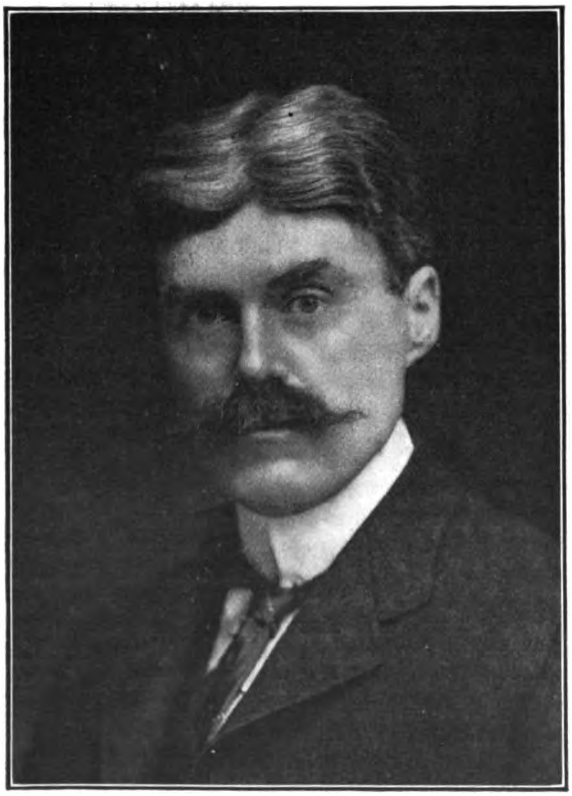
The presence of hyaline casts in urines of low sp. gr., with or without albumen, is of great significance, and usually means a grave kidney lesion, chronic interstitial nephritis. Even in this condition, however, no hard and fast rules can be formulated, and one depends in the diagnosis, not upon the urine findings alone, but upon the urine findings supplemented by a consideration of the results of physical examination. It seems reasonable, therefore, to conclude that no dogmatic rules can be laid down concerning the significance of hyaline casts in urine.

The general character of the urine, the quantity passed, the sp. gr., and the amount of urea and albumen must be taken into consideration in conjunction with the results of the physical examination of organs other than the kidneys, and in conjunction with the clinical evidence of renal disease itself.

NORTHWESTERN LANCET
A SEMIMONTHLY MEDICAL JOURNAL
The Official Organ of the Hennepin County Medical Society
W. A. JONES, M. D..................EDITOR
Editorial Office, 515 Pillsbury Building
W. L. KLEIN, PUBLISHER
SUBSCRIPTION, $2.00 A YEAR.
839-840 Lumber Exchange.....................Minneapolis

JULY 1, 1904

DR. JAMES HENRY DUNN



The sudden and unexpected death of Dr. J. H. Dunn at St. Louis June 16, 1904, of acute endocarditis, was a shock to his many friends, lay and professional.

No one medical man in the Northwest was so popular, so highly respected, admired, and loved. His memory will remain as a sorrow through this generation who knew him.

Dr. Dunn had many manly characteristics that endeared him to his friends. He was absolutely fearless in his honesty, and always ready to uphold what to him seemed the right course in his dealings with his associates. No man feared any back-handed work from him; he was outspoken in his opposition, and was correspondingly respected for his opinions. His friendship was looked upon as a privileged favor, and his loyalty was unquestioned. His sincerity and devotion to his profession was above and beyond any commercial desires, and his many patients, to whom he was kind and fatherly, respecting their circumstances in times of trouble, is a monument that will last. Others may go and speedily be forgotten; not so with the memory of Dr. Dunn.

His skill and judgment as a surgeon was remarkable; his broad insight into the individual and his diseases made him a valued counsellor.

Dr. Dunn was a self-made man, in that he took advantage of every opportunity to better himself in knowledge and experience until he reached the high plane he occupied at the time of his death.

He wrote many articles based on original work and original research which have been published in many of the leading journals. His literary work was exceptionally clear, his language expressive, and his ideas sound. As a teacher he had few equals. He was an indefatigable worker, throwing into the work an intensity that was often exhausting, yet it was his way. He became absorbed and interested to such a degree that his rest was broken and his health impaired. Four years ago it was thought that the severe illness he passed through would break him down, but his vigor returned and he apparently recovered, evidently with an impaired heart.

The Hennepin County Medical Society will long mourn his absence. At the September meeting a memorial paper will be presented that will embody the life and work of this man to whom we looked for guidance, support and advice.

The following resolutions were passed at a special meeting of the Hennepin County Society, which was very largely attended:

At a special meeting of the Hennepin County Medical Society held at their library on Saturday, June 18, 1904, to take appropriate action upon the death of Dr. James H. Dunn, the following preamble and resolutions were unanimously adopted, viz.:

Whereas, The Great Reaper has been in our midst and removed Dr. James Henry Dunn from the scene of his active usefulness in the medical profession; and,

Whereas, We look upon his death as a calamity not only to the medical profession, but to the public at large; and,

Whereas, We desire to place upon record an expression of our esteem for him both as a physician and surgeon and as a man among men; now, therefore, be it

Resolved, That in the death of Dr. Dunn the medical profession of this state and the entire Northwest has lost one of its most illustrious members, who, by reason of his education, culture, ability, integrity and loyalty, has risen from comparative obscurity to the zenith of attainment in his professional career.

Resolved, That the life and character of Dr. Dunn furnishes an example worthy to be followed by members of his profession, as illustrating the true physician in his relation to the public, the physician to his patients, and physicians to each other.

Resolved, That we tender to his surviving family our sincere sympathy in their affliction, and assure them that we, too, have lost a personal friend, and with them mourn.

Resolved, That we attend his funeral in a body.

Resolved, That a copy of these resolutions be sent to the daily press of this city for publication, and that a copy be sent to the family of the deceased.

William Asbury Hall,
John W. Bell,
Richard J. Hill,
Committee.

IN MEMORIAM

J. H. Dunn, M. D.

Glory of warrior or statesman or king,
All that inheritance ever can bring;
Heaped up riches, smiles of the fair,
Are but small things to the honor you bear.

Husband and father, counsellor, friend,
Low o'er thy bier in sorrow we bend.
Learned and simple of whatever birth,
All know a friend has vanished from earth.

Too few indeed were the years of thy life,
Yet crowded full of heroic strife.
With honors well earned the tale is replete,
Short as it was, 'tis finished, complete.

S. E. Howard, M. D.

THE MINNESOTA STATE MEDICAL SOCIETY.

The annual meeting of the State Society in Minneapolis, June 1, 2, and 3, was the largest in the history of the organization. Evidently the reorganization proposals of the A. M. A. are in favor with the general profession.

The entire absence of business, political and organic, was an unqualified success. The scientific work proceeded uninterruptedly, and demonstrated the wisdom of the new plan. The abolishment of section work, the mixed order of papers, symposiums, etc., attended by large numbers, was distinctly an improvement over the old order of previous meetings. In former times a section was sparsely attended while others, like the now popular surgical section, was crowded. This year the interest was general, and the papers were, for the most part, interesting and were freely discussed.

In future years when the association becomes larger it may be deemed wise to return to section work, i. e., surgical and medical. It is fair to presume that the society will never again attempt to divide its labors among all the departments of medicine.

The treasury of the State Society is on a sound basis, and more than two thousand dollars remain with no bills to meet other than the amounts set aside for the transactions.

The House of Delegates was unusually busy, and most of its members were unable to participate in the scientific work, as the time was occupied by important business matters. The question of club practice was discussed, and the St. Cloud disturbances were adjusted by the promise of the club doctor to withdraw from lodge work, which was followed by his reinstatement.

A resolution was adopted by the House of Delegates looking to the discontinuance of all needless contract work. In all probability the practice cannot be entirely eradicated, but the disapproval of the State Society will do much to make club practice unpopular, even though the doctor has a legal right to practically give his services to those who can and should pay a reasonable fee. If the State Society would take a firm stand upon the question there is hope for the elevation of the profession.

The House of Delegates elected Dr. J. W. Bell of Minneapolis president, and Dr. H. M. Workman, of Tracy, delegate to the A. M. A., Dr. W. H. Hall holding over for the ensuing year.

The clinics are growing in favor, and doubtless will be more largely attended in future years.

The social side was a cold lunch, plenty of mineral water or beer, and a really good vaudeville performance.

Elks' Hall was an ideal meeting-place with plenty of floor space, side rooms, comfortable seats, and good air. The entertainment committee deserve much credit for their work, which took time and attention, as well as much money. The entertainment should have been on Thursday evening, however, and the scientific meeting on Friday evening, thus insuring a good attendance on both nights.

The next meeting will be held in St. Paul.

THE ADDRESS OF DR. FERGUSON

The oration in surgery was delivered by Dr. Alexander Ferguson, of Chicago. He gave a running outline of the advances in surgery, describing in detail some of the modern operations.

The address was attended by a large audience, and was full of brilliant suggestions.

Evidently the surgeon has the entire body within his grasp, and does not hesitate to attack many of the diseases which have been hitherto sacred to the internalist. One statement which Dr. Ferguson made may meet with many challenges, namely, that cases of interstitial, parenchymatous, and diffuse nephritis are strictly and wholly surgical diseases.

Pneumonias which do not speedily terminate by crisis and early resolution are to be operated by resection of a rib and drained. This may seem like heresy to many, and will be scorned by the practitioner who uses his own methods of cure, yet from a scientific standpoint the surgeon may be the proper man to treat the delayed recoveries in a certain proportion of pneumonias.

Fortunately for the neurologist the surgeon touched lightly upon the nervous sustem, particularly in cases without external injuries or gross manifestations.

If the surgeon continues his incisive excursions beyond the limbs and the abdominal cavity no one can determine his ultimate destination. Unquestionably, he will find a temporary resting place in the myocardium, and may attack the valvular diseases. He has already invaded the heart that has been directly wounded, but so far with no success. Who knows how much he may accomplish?

There is a general tendency among surgeons and internalists to overlook diseases typically degenerative in character, whether in the visceral and thoracic organs or confined to the nervous system. The prevalence of arterial disease, either arteriosclerosis or atheroma, is underestimated. In these diseased states surgery can accomplish little or nothing, while much can be done by the internalist who studies details and attends to the daily life of the patient. The surgeon is inclined to look upon the case from a surgical standpoint mainly, and it is the exception for him to give advice and direction as to living, care, foods, and other important details which contribute to the comfort and safety of the individual.

Papers on general surgery are valuable as they suggest and stimulate both internalist and surgeon to do their best work, and, although the surgeon's innovations seem beyond the bounds of possibilities, they should be given the greatest consideration.

THE SATANIC FOURTH

By the time THE LANCET reaches many of its readers the returns from toy pistols, cannon crackers, and other patriotic implements will engage the attention of the medical profession, bereaved parents, and municipal authorities. An effort has been made in some of the larger cities to restrict the sale of fire-works, and to limit the space in which they are to be used. The effort will be an abortion in all probability, however earnest the authorities are to promote the safety of the small boy. The fault lies with the parents, primarily, and with the lax condition of the ordinances, secondarily.

It is difficult for an enthusiastic public to curb its patriotism, to silence the intolerable explosion of crackers, or to appreciate the sufferings of the sick and nervous on such a day. The dangers of fire-works and the loss of life and limb do not appeal to the majority. It would seem as if the repeated fatalities of each year would leave its impression. Experience is a great teacher, but its lessons are too often fleeting. The usual preparations for major and minor surgery should not be relaxed.

NEWS ITEMS

Dr. H. Dean, of Isanti, has located in Kelliher.

Dr. Geo. A. Sarchet has located at Denbigh, N. D.

Dr. John J. Quinn, of Superior, Wis., died last month.

Dr. W. L. Freeman, of Eyota, has moved to Chatfield.

Dr. G. W. Dahlquist has moved from Dassel to Cokato.

Dr. G. A. Morley, of Crookston, was married last month.

Dr. C. C. Walker has moved from Chatfield to Pine River.

Dr. R. B. Hogue, of Linton, N. D., is building a hospital.

Dr. A. H. Doty has moved from Waseca to Merriam Park.

Dr. R. B. Lees has moved from White, S. D., to Pipestone, in this state.

Dr. S. H. Van Cleve, of St. Cloud, will probably locate in Minneapolis.

Dr. H. T. Sherman, a recent Hamline graduate, has located at Becker.

Dr. G. F. Walter, a graduate of the State University, has located at Odessa.

Dr. D. C. Davison has taken the practice of Dr. Plehn at Clara City, N. D.

Dr. A. J. Bennett has returned to Vermillion, S. D., where he formerly practiced.

Dr. Robert B. Stephenson has moved from Edgerly, N. D., to Hillsboro, N. D.

Dr. W. F. Baillie has taken the practice of the late Dr. Critchfield, of Hunter, N. D.

Drs. F. H. Gamble and John C. Koch, of Thief River Falls, have formed a partnership.

Dr. P. H. Irish, a University graduate, class of 1900, is building a hospital at Akeley.

Dr. Gustav Hoff, who has just graduated from a Chicago medical college, will locate at Willmar.

Dr. Merton Field, a graduate of the State University, class of '02, has located at Minnesota Lake.

Dr. D. Zell, of Kenmare, N. D., was married last month to Miss Ethel Smith, also of Kenmare.

Dr. Isabella C. Herb, of Rochester, has gone to Johns Hopkins to study pathology for a few weeks.

Dr. I. W. Higgins, who graduated this summer from the State University, will locate in California.

Dr. F. H. Staley, of Clear Lake, S. D., was married last month to Miss Lena Fetzlaff, of Hayti, S. D.

Dr. G. A. Plummer, of Granger, has moved to Chester to take the practice of Dr. Freemire, who died last month.

Dr. Thomas B. Smiley, of Mt. Vernon, S. D., was married last month to Miss Bernice Brown, of the same place.

Dr. C. E. Johnson, a graduate of Rush, has located at Appleton, and formed a partnership with Dr. Tennyson.

Dr. E. J. Clemons, of Aberdeen, S. D., and Miss Catharine Weller, of Meadville, Pa., were married last month.

Dr. B. S. Nicherson has located at Glencoe, and will have charge of Dr. Burch's practice while the latter is in Europe.

Dr. Anders E. Johnson, State University, '03, of Madison, was married last month to Miss Dina Rindal, of Fruitport, Mich.

Dr. Arthur Movius, who has been practicing in North Dakota, has become house physician of Asbury Hospital, of this city.

The Catholic Church of Worthington offers to build a $10,000 hospital at that place if the citizens will raise one-half the amount.

The Bethesda Hospital Association of Crookston will not give up their efforts to secure sufficient funds to build a hospital this year.

Dr. E. B. Dougherty, a recent graduate of the State University, has been appointed a member of the staff of the Fabiola Hospital of Eveleth.

Dr. I. C. J. Wiig has purchased the practice of Dr. W. D. Thelen, of Carpio, N. D. The latter will go to Heidelberg, Germany, for study.

The Rosser Hospital, of Grand Rapids, has been sold to Mrs. Fredericks, who has been the superintendent of the hospital for the past three years.

Dr. L. D. Peck, of Hastings, was married last month to Miss Katherine M. Fasbender, of that place. Dr. Peck is a Hamline graduate, class of '02.

Dr. J. M. Dodd, who has conducted Dodd's Hospital at Ashland, Wis., for the past ten years, has become chief surgeon of St. Mary's Hospital of that city.

Dr. L. A. Ward, of Bemidji, who has been very sick at his home in Eau Claire, Wis., is able to return to Bemidji, and hopes to resume his practice soon.

Dr. E. C. Gaines, of Buffalo Lake, was married last month to Miss Adele Foster, of Hector. Dr. Gaines is a graduate of the State University, class of 1900.

Dr. C. C. Donaldson, of Fairmont, who moved to Denver some time ago, has decided to return to Fairmont, as the Denver climate has been very bad for his family.

Dr. O. W. Rowe, of Towner, N. D., was married last month to Miss Kathryn McCabe, of the same place. Dr. Rowe graduated from the State University in the class of '03..

Dr. Stabo of Spring Grove, who has had charge of the practice of Dr. Gunderson during the latter's absence in Europe for three months, has returned to Spring Grove.

Dr. W. A. Lumley, of Renville, will spend four months in England. During his absence Dr. Knellem Lee, a recent graduate of Johns Hopkins, will have charge of his practice.

Dr. D. E. Seashore, of Battle Lake, and Miss Ida W. Jones, daughter of Dr. M. S. Jones, of the same place, were married last month. Dr. Seashore is a graduate of the State University, class of '02.

Dr. Henry R. Richard, a graduate of the State University, class of 1900, now practicing at Little Falls, has been appointed physician and surgeon for a mining company at Bolster, Wash., and will accept.

Chiropractics has invaded Mankato, and "Dr." Fitzgerald carried it there. We first heard of it in Duluth, and as it is traveling southward we may expect soon to hear of it in "Mecca," sometimes called Rochester.

Dr. N. J. Shields, of Lidgerwood, N. D., has sold his interest in the large hospital of that place to Drs. E. G. Sasse and G. O. Shrodes, of Excelsior, Minn. Dr. Shaneley retains his interest in the hospital. Dr. Shields will go to Europe for study.

Dr. L. W. Babcock, of Wadena, who is a power in Minnesota politics, has gone to California for a couple of month, and if he likes the climate he may locate there. If he does not leave Wadena, he will give up general practice, and do only office work.

At the 36th annual meeting of the Crow River Valley Medical Society, held last month at Willmar, Dr. F. M. Archibald, of Atwater, was elected president and Dr. J. W. Robertson, of Litchfield, secretary, and Dr. W. E. Chapman, of Litchfield, treasurer.

The Hon. J. C. Pierce, of Red Wing, who recently died in that city, left $10,000 for hospital purpose, and provided that the sum might be given to an existing hospital. Such bequests are very rare in the smaller cities of the Northwest, where they are most needed.

Dr. J. F. Plehn, of Clara City, has located in Minneapolis and will be associated with Dr. Norman Driesbach, who is professor of anatomy in Hamline. Dr. Driesbach will spend several months in special study in Europe. Dr. Plehn is a recent graduate of Hamline.

Dr. H. C. Arey, of St. Paul, a recent graduate of the State University, has located at Excelsior, where he purchased the practice of Dr. Sasse, who has gone to Lidgerwood, N. D. Dr. Shordes, who succeeded Dr. Sasse, now follows him to Lidgerwood. Dr. Sasse is a Hamline graduate.

IS GENERAL WOOD A GREAT MAN?

Two newspapers of Cleveland, the Press and Plain Dealer, have said outright that the rapid rise in military standing of Leonard Wood has been due to favoritism. Both ignore the wonderful things accomplished in Cuba by General Wood as a sanitarian, when he held the position of governor-general. It is worse than untrue to credit the beginning of this work to General John R. Brooke, who preceded General Wood as governor of Cuba, and under whose command at Camp Chickamauga there occurred many hundred deaths from typhoid fever of young men in the prime of life whose lives would have been spared to the country if they had been commanded by an officer willing to receive and to act on the advice of his medical staff. The greatest sanitary crime of the Spanish war was committed by General Brooke, and it is a matter of history that the cleaning up of Cuba was only being done in a most half-hearted way until General Wood was given charge. General Wood's accomplishments in ridding Havana of yellow-fever for the first time in centuries was one of the greatest achievements in public affairs that the world has ever seen. History will say that General Wood accomplished one of the greatest things that has ever been done in demonstrating to the world that a dread disease can be banished from its favorite climate when modern sanitary methods are properly and thoroughly applied.—Cleveland Medical Journal.

NORTHWESTERN LANCET

A Semimonthly Medical Journal

VOL. XXIV JULY 15, 1904 No. 14

LOCATING SURGICAL KIDNEY LESIONS*

By M. C. Millet, M. D.

ROCHESTER, MINN.

The surgeon of to-day who contemplates a cutting operation upon the kidney is possessed of information of much value regarding the probable findings and ultimate outcome. From the time of the first deliberate nephrectomy by Simon, in 1869, for a quarter of a century, nephrectomies were planned and executed without adequate knowledge of the presence of a functionating organ on the opposite side. After these years of accidents, ranging from operations on the wrong kidney to removal of the only kidney, it came to be considered good surgery to first explore the supposed sound kidney before a serious operation upon the diseased side was undertaken. If for any reason positive knowledge of the existing conditions cannot be secured, exploration by incision is still a necessity. At the best, exploration gives but a knowledge of the macroscopical conditions. Urine from the separate kidneys gives us what might be termed the microscopical conditions. It not only tells us that there is a kidney but it tells us the amount and character of the work it is doing. Such knowledge is not only valuable to the surgeon, but may often prove of practical benefit to the internist. Certain it is that all cases of nephritis are not bilateral, and if not always bilateral, are the bilateral cases affected by equally grave conditions on each side? Such questions, when capable of answer, would make prognosis more certain.

A case with a surgical kidney lesion, not always but commonly, presents pathological elements in the urine, blood, or pus in varying amounts. If the pus be tubercular it must be so determined, as a knowledge of the tubercular nature of the disease will influence future examinations.

The presence of a tumor in the kidney region should not convince us that we have found the source of the foreign elements. All tumors in the kidney region are not kidneys. Such a case might present pus in the urine from a prostatitis or an epididymitis. Therefore, in our search for the foreign elements, we eradicate the seminal vesicles, prostate, epididymis, and bladder by digital examination per rectum and cystoscopic examination of the bladder.

The instruments to be used in separating the urine will be determined by the individual preferences of the observer and the conditions existing in the given case. For a sense of absolute certainty nothing compares with the ureteral catheter. Conservatism, however, would seem to indicate that its use should be bounded by certain restrictions. Any procedure purely diagnostic in its nature which has even a remote possibility of making the patient's condition worse than it already is, is bad. The danger of infecting a sound ureter, or of doing traumatism to the ureteral opening which would favor subsequent infection, is a real danger and one to be guarded against. To that end it would seem that some instrument which separates the urine within the bladder ought to be the method of choice in all septic cases. In cases suitable for its use, the Harris segregator will be found satisfactory and its results trustworthy. Such cases as present active vesicle disease, contracted bladder, or deformity from outlying conditions, may prove unsuitable for its use. In these cases, satisfactory results may be secured by the Cathelin or French instrument.

---

*Read before the Olmsted County Medical Society, November, 1903.

All efforts failing to locate the disease and prove the presence of a competent kidney on the opposite side, exploration becomes a necessity. Dr. C. H. Mayo suggests that the exploration of the supposed sound kidney be made through an anterior laparotomy incision instead of through the loin. In case the exploration of the sound kidney is followed at once by a grave operation on the other side, the functionating of the sound kidney is less subject to interference by the anterior incision.

Granting that our efforts to secure the urine from the separate kidneys have been successful, and chemical and microscopical examination demonstrates the disease to be located in one kidney, we still must know, as near as may be, whether the opposite kidney is competent to perform the work needed in case the diseased organ be removed. That the future will develop some practical, accurate method of determining kidney competency, seems certain. Cryoscopy and the Phloridzen test are attractive, but physiological variations detract from their usefulness, and more time is needed to determine what is physiological and what pathological.

Lacking some thing more definite, an estimate of the comparative amounts of urine and area of the two kidneys makes a diagnosis of the individual competency fairly accurate. Combining this knowledge with the clinical aspects of the case makes the prognosis of surgical interference reasonably definite.

The subjective symptoms of surgical kidney lesions are often misleading, inadequate to the gravity of the conditions existing, or entirely wanting.

The following case well illustrates the absence of subjective symptoms:

Patient, male, aged 56. No pain, no attack of pain, no tumor. For five years a constant, unvarying hematuria, a hemorrhage which had reduced the homoglobin to 34 per cent. Segregation disclosed the source of the hemorrhage to be entirely from the left kidney, and nephrectomy was followed by permanent recovery. The kidney removed was apparently a normal organ, and careful microscopical examination failed to show the cause of the hemorrhage. Plainly, exploratory incision, even if double, would have been of no service, and possibly dangerous. Even slight or indefinite localizing symptoms might have tempted a surgeon to do a nephrectomy, with equal prospects that the normal kidney might have been sacrificed. Perhaps the most common of misleading symptoms of kidney lesion are those referable to the bladder. For weeks or months before pus or blood appears in the urine, frequency of micturition may be the only symptom in case of small tubercular abscess, or encysted calculus.

The radiograph findings when positive are reliable, but the radiographs which fail to show stone are uncertain. The variations in tube tension and time of exposure make it possibe for stone to remain undetected. In such cases examinations of the separate urines will rarely give more than a suspicion as to the location of the disease; perhaps, comparatively less work on one side or the other, yet hardly sufficient grounds to justify operation. The first appearance of foreign elements in the urine should lead to further efforts in locating the disease. Inadequate subjective symptoms are well illustrated by the following case:

Patient, female, aged 35 years, mother of seven children. For something like a year she had been in failing general health, losing flesh and strength with indefinite shifting pains, but no urinary or kidney symptoms until within the past few weeks. Since then frequency of micturition and some burning and tenesmus, but no localizing kidney pains. Urine, acid, and heavily loaded with pus in which tubercular bacilli were found; right kidney movable and slightly enlarged. Segregation demonstrated that the tubercular pus was coming from the right side, and that there was an actively functionating left kidney, the urine from which was free from pus. Exploration of the right kidney by Dr. W. J. Mayo disclosed a kidney which was only a little larger than normal, but filled with many small abscesses containing cheesy tubercular material and pus, many of these pockets being closed and not communicating with the kidney pelvis. Only small islands of kidney tissue here and there remained. The months of failing general health represented the period of formation of these abscesses and progressive destruction of kidney tissue. The few weeks of urinary symptoms represented the time since the first abscess ruptured into the kidney pelvis and began discharging by way of the bladder. Nephrectomy produced an improvement in general health, but within six months secondary vesical disease developed, and a year later cystoscopic examination demonstrated extensive tubercular ulceration. No involvement of the remaining kidney could be demonstrated. It is now nearly two years since the nephrectomy, and in spite of the vesical disease, the patient's general condition is still maintained. It now seems probable that some undetected vesical diseases existed at the time of operation.

Second to the importance of locating the disease is the knowledge of the conditions existing in the fellow kidney. To secure such knowledge is a laudable ambition; but we should stop short of any procedure which even remotely endangers the patient's welfare, and be the first to advise exploratory incision, which, in the hands of a competent surgeon, is devoid of danger.

COMPLICATIONS AND SEQUELÆ OF TYPHOID FEVER*

By Mary P. Hopkins, M. D.

Assistant Physician, St. Peter State Hospital

ST. PETER, MINN.

While in an uncomplicated case of typhoid fever good nursing and hygiene are the chief requisites, and the tendency is almost invariably toward recovery, in few morbid conditions is so much care and watchfulness necessary. At any time during the course of the disease, and with but brief warning, the most grave complications may arise, and the skill of the practitioner be taxed to the utmost. Not infrequently the symptoms arising from the complications so overshadow and mask those of the disease that the primary infection goes unrecognized.

Out of the 91 complications and sequelæ of typhoid fever described by one of our well-known medical writers, the following, taken from 50 cases which have come under our own observation, will sufficiently illustrate their influence upon the course of the disease. The early involvement of the nervous system is shown by the persistent headache which is classed among the prodromal symptoms. In the mentally unstable, the involvement of the nervous system will be in every way more marked than in the stable, and a degree of infection which in the last-named class would give rise to only the usual headache and malaise, may produce in the former a chain of symptoms entirely out of proportion to the diseased conditions present.

During the past year two women in the delirium of typhoid were committed to the St. Peter State Hospital as insane; both belonged to the unstable class, and when the acute infection subsided regained their mental faculties.

In this class delirium is common, and with the other nervous manifestations may be directly due to the effect upon the nervous system of the toxines produced by the typhoid bacillus, and may be to some extent an index to the degree of toxemia present.

Meningitis is a rare complication, and its diagnosis is extremely difficult in this disease, which is constantly accompanied by functional nervous disorders, and it always suggests the possibility of this being a tubercular as well as a typhoid infection.

A case of post-typhoid neuritis has never come under our observation.

Bronchitis occurs so frequently that it is regarded as a symptom rather than as a complication. In about 75 per cent of our cases we have found the early, mild bronchitis. Occasionally the catarrhal conditions extend into the smaller bronchi, and a bronchopneumonia develops. The harassing cough, with the sudden muscular movements accompanying it, often increases the abdominal pain and should be kept well under control.

In a few of the severe, and protracted cases hypostatic congestion has occurred and a grave prognosis been verified.

In three of our 50 cases of typhoid fever lobar pneumonia developed, and this is said to occur as a complication in 10 per cent of all cases. The pneumococcus was found in the sputum in each of our three cases.

---

*Read before the Minnesota Valley Medical Society, Mankato, May 3, 1904.

The clinical course of typhoid associated with pneumonia is well illustrated in the following case:

A. D. A——, a nurse, aged 21, whose family history was good, but who had shown a tendency toward bronchial affections, was, after the usual prodromal symptoms, taken sick with what appeared to be a typhoid infection of moderate severity. The condition of the tongue, spleen, and abdomen were characteristic. The Widal and Diazo reactions were present. Examination of the chest showed harsh respiratory sounds over the lower lobe of the right lung, but nothing else indicative of disease.

No unusual symptoms appeared until the third day, when the patient felt considerable pain in the right axillary region. Resonance was impaired, and respiratory sounds diminished over the right lower lobe. Throughout the left lung bronchopneumonic areas were present.

The fourth day the condition of the lungs was unchanged. The abdomen was very tender and slightly distended. The bowels were constipated. The temperature ranged from 103° to 104.5°; the pulse was 120, and respiration 33.

The fifth day there was absolute dullness and absence of respiratory sounds over the right lower lobe. Dyspnea was marked. The temperature ranged from 103.5° to 105.3°; pulse 122 to 135; and respiration 40. The cough was frequent, and because of the extreme abdominal tenderness, very painful. The sputum was blood-streaked, and contained stereptococci and pneumococci. The abdomen was distended and tympanitic, and over the epigastric region a few rose-colored spots appeared.

During the sixth and seventh days there was no change in the condition except that the abdomen became thickly covered with rose spots.

The eighth day the temperature remained near 105°, and was very stubborn. The pulse was 150, and the respiration 40 to 50. The cyanosis was extreme. Oxygen was given several times with an immediate improvement following each administration, which would be noticeable for some time after. The abdomen was distended and tympanitic; nothing could be retained upon the stomach.

The ninth and tenth days saw no apparent change for the better, and upon several occasions a fatal termination seemed imminent, but with the aid of oxygen and strong stimulation the crisis was passed.

Upon the eleventh day considerable improvement was apparent. The temperature declined by lysis, and the course of the disease thereafter was that of uncomplicated typhoid fever.

Of the abdominal complications hemorrhage occurs in from 3 to 5 per cent of all cases and in 10 per cent of those resulting fatally.

Hemorrhage is one of the most grave complications, though not necessarily fatal. Its appearance indicates considerable necrosis of tissue, the bleeding usually resulting from the separation of sloughs in the lymphoid glands of the intestines. Hemorrhage occurring early in the course of the disease may be due to the rupture of capillaries in the inflamed mucous membrane of the bowel or to dyscrasia of the blood. Seldom does a profuse hemorrhage give the first warning. There will usually be a blood-streaked stool, or a stool in which bits of blood-tinged mucus may be discovered upon close inspection. The blood may be decomposed, and so thoroughly mixed with the usual bowel contents that only a brownish tinge may be noted.

In three of our 50 cases hemorrhage occurred. The following case is quite typical of this complication.

M. C—— was admitted to a general hospital in the latter part of the second week of typhoid. The temperature was 102°, pulse 100, respiration 22. The abdomen was tympanitic and extremely tender; the bowels were loose, but there had been no trace of blood in the stools. Eight hours after admission there was a bowel movement which was dark brown in color. Within a short time a large amount of clotted blood was passed. There was as yet no acceleration in the pulse and none of the constitutional symptoms of hemorrhage.

At the end of 12 hours the patient sat up in bed, and soon afterwards a profuse bright-red hemorrhage occurred. The pulse became rapid and irregular.

The following morning the fourth hemorrhage took place. The temperature became so low that the thermometer would not register by mouth, the radial pulse could not be felt, and the hands and feet were cold. The patient sank into a low muttering delirium, which was accompanied by twitching of the muscles of the extremities. With intervals of but a few hours, two more hemorrhages occurred, with a corresponding increase in the severity of the constitutional symptoms.

The morning of the third day there was a large hemorrhage, and for several hours there was a continuous oozing of blood from the rectum. The extremities were cold, meteorism was extreme, delirium continued, and the patient picked at the bed clothing continually.

The fourth day the nervous symptoms were less marked; the pulse was stronger. For several days following there were traces of blood in the stools, but no more hemorrhage occurred, and the case went on to recovery.

After each hemorrhage, from 20 to 30 ounces of normal saline solution was given in the tissues of the groin and axilla by hypodermoclysis, over five quarts of the solution being used in this way.

With the occurrence of hemorrhage it is probable that ulceration has extended into the muscular fibers of the bowel wall and with but slight extension perforation may take place. This, the most dreaded of all complications, occurs in 1.5 per cent of all cases. Besides directly from ulceration, perforation may result from distention of the bowel with gas, or, as recently shown by Hammond, from adhesions resulting from previous appendicitis. While it is possible for a case of perforation to recover spontaneously, such occurrences are extremely rare, and but few such records are found in medical literature, while several cases have been recently reported in which the significance of the sudden lancinating pain, followed by tenderness and rigidity of the abdominal walls, vomiting, collapse, the small and rapid pulse, and leucocytosis have been quickly recognized, laparotomy performed, and recovery follow. When this accident has occurred the treatment can be only surgical and that without delay.

Appendicitis is an occasional sequel, and may often occur as an unrecognized complication of typhoid fever.

In uncomplicated typhoid we do not, during the first few days, find tenderness more marked in the right iliac than in the other regions of the abdomen, though later, when the inflammation of the lymphoid glands of the lower portion of the ileum has become well marked, we do find considerable tenderness there.

In a pure typhoid infection we do not find an increase in the number of leucocytes, while in appendicitis, except some cases of catarrhal, we do find leucocytosis.

When the appendix has once been the seat of disease any acute infection, but particularly that ot typhoid, is apt to bring into activity a latent inflammation.

In one of our cases who six months before had an attack of catarrhal appendicitis, typhoid was ushered in with acute appendicitis, there was a slight leucocytosis, the appendiceal symptoms soon subsided, and the typhoid ran a mild and ordinary course.

In the following case the typhoid preceded the appendicitis:

G. M——, a nurse, aged 20, one month after recovery from typhoid fever was seized with sudden cramp-like pain, very intense, which was located in the region of the appendix. The abdomen was flat, but very tender at McBurney's point. No tumor could be discovered. The spleen was enlarged. For several hours the temperature was but slightly elevated. The tongue was covered with a thin white coat, the breath foul and bowels constipated. In about twelve hours the local appendiceal symptoms had subsided. The temperature, however, was 103.4°, pulse 100, respiration 20.

Examination of the chest was negative. Examination of the blood showed a diminution in hemoglobin and in the number of red-blood cells. There was no leucocytosis. Widal reaction was present. The urine was diminished in quantity, and contained a large amount of albumen. Diazo reaction was present.

There followed the phenomena of a severe typhoid infection: tympanites, rose-spots and hemorrhage. There was no recurrence of the appendiceal symptoms. At the end of the third week the temperature became normal. Six weeks later, and when convalescence appeared complete, the patient was taken with chills, severe headache, and pain in the back and limbs. For the first three days no abdominal symptoms appeared, but at the end of that time a dull aching pain developed in the region of the appendix. The pain gradually increased in severity, but was at no time cutting in character. Tenderness, which was at first confined to the appendiceal region, gradually extended over the entire abdomen. A diagnosis of appendicitis was made by the attending physician, and an operation urged but refused by the family.

Recovery was slow, and was scarcely complete when a third attack occurred. From this on the picture was that of tubercular peritonitis.

If it were not for the presence of the rose-spots and the occurrence of the very characteristic hemorrhage in this case, we should be less positive that we had here a relapse of typhoid coincident with acute catarrhal appendicitis. It seems probable that the appendicitis with the accompanying inflammatory conditions in the neighboring organs, and through lowered resistance, favored the relapse.

As in this case tuberculosis in one of its many forms is not an uncommon late complication or sequel. As other exhaustive diseases increase the vulnerability to tuberculosis, so does typhoid fever seem to produce a particularly favorable soil for the development of the tubercle-bacillus. Four out of our 50 cases developed tuberculosis within three months after the disappearance of typhoid symptoms.

As in other acute infections, the heart muscle is in special danger of attack. In even the mildest cases, we usually find some indication of myocarditis. The heart sounds are at first accentuated, but as the toxemia progresses the impulse becomes weaker and diffuse, the rate increased, all pointing toward a loss of cardiac tonus. These symptoms may disappear as the condition of the patient improves, but in a large number of old typhoids cardiac lesions were found which did not exist at the time of the acute infection.

Involvement of the kidneys was present in about 50 per cent of our cases as shown by the albumenuria, which appeared early in the disease. The degree of renal disease is variable, and depends largely upon the previous condition of these organs. In two cases which resulted fatally, and upon which post mortems were held, it was evident that acute parenchymatous changes had followed interstitial disease of long standing. Uremic symptoms may develop early and for a time obscure the true nature of the disease.

A study of the foregoing conditions leaves us to believe that while typhoid fever is a general infection, in the course of which certain changes occur, their degree and chief point of localization are variable and depend upon the previous condition and physical peculiarities of the patient, the brunt of the infection falling upon those organs which through pre-existing disease or hereditary tendencies are least resistant. Therefore, to intelligently interpret the significance of each symptom as it arises and promptly meet each exigency, we must have an intimate acquaintance with the previous history and hereditary weakness of the individual. While typhoid fever is always due to an infection with the typhoid bacillus, the condition produced by the growth of one organism favors the growth of others, such as the tubercle-bacillus, the streptococcus, and the pneumococcus.

REFLECTIONS ON THE SURGERY OF PROSTATIC HYPERTROPHY

Dr. Telluride (Med. News, April 23, 1904) shows up in detail his technique in attacking the prostate surgically. Seventeen cases of prostatectomy are reported: four suprapubic operations (three deaths, one good result); two combined suprapubic and perineal operations (one death, one good result); eleven perineal operations (good results in all).

These deductions are given:

1. Infection is the all-important consideration in prostatics; (2) perineal drainage of the bladder relieves the patient; (3) many of these patients will not stand extensive operative procedures or long-continued anesthesia; (4) partial removal of the prostate will be tolerated by many infected patients, and a good result obtained; (5) perineal drainage of the bladder only should be done in desperate cases and in debilitated patients in whom morcellation is necessary. In these cases the prostate should be removed at the second operation.

SKETCH OF THE LIFE OF DR. SAMUEL D. GROSS*

By J. Warren Little, M. D.

Professor of Clinical Surgery, University of Minnesota

MINNEAPOLIS

It is fitting that we occasionally rest, for a short time, from the many cares incident to a busy professional life, and contemplate the lives of those eminent in our profession who have preceded us, and through whose labors we are able to enjoy the advanced position occupied by medicine and surgery to-day.

I often wonder if the same veneration and love for the teacher exists among medical students to-day as existed when we were attending lectures. You remember with what admiration, in your respective schools, you regarded Ford, Oliver Wendell Holmes, D. Hayes Agnew, Frank Hamilton, Valentine Mott, Flint, Wood, Pepper, and many others. It was with this same fondness we students of the Jefferson Medical College regarded Samuel D. Gross, the nestor of American surgery, a very good likeness of whom I have presented to you as members of the Hennepin County Medical Society. With this picture I was very loath to part, but thought it selfish to keep it alone when it might be enjoyed by you as well.

Within the time allotted to me I can give but a very brief and hurried sketch of the life of this great man, but enough, I hope, to stimulate you to study, discovering for yourselves the cause of his unusual success.

Samuel D. Gross was born on the 8th of July, 1805, within two miles of Easton, Pennsylvania. His parents were natives of the neighborhood, and were of German descent, their grandparents having come to this country as early as the seventeenth century. His father died of apoplexy in 1813, at the age of fifty-six; his mother lived until 1853, dying at the advanced age of eighty-six.

As a boy he attended the country school until seventeen years old, when he considered himself competent to commence the study of medicine. As was the custom at that time, he entered the office of a country physician. Not receiving any aid in the way of instruction, he soon left and tried another, with no better success. By this time he concluded that his preliminary education was insufficient for the proper completion of a professional life. The Academy of Wilkesbarre, conducted by a graduate of Yale College, was selected as the school for further study. Here he remained only one year. After another year and a half spent in study, at the age of nineteen years, he began the study of medicine in earnest, his preceptor being Joseph K. Swift, of Easton, Pennsylvania, with whom he remained a year. In October, 1826, he went to Philadelphia, matriculated at the Jefferson Medical College, founded but two years previously by Dr. George McClellan, and became his private student, graduating after a two-year course.

Dr. Gross, having determined to remain in Philadelphia, opened an office at the corner of Library and Fifth streets, immediately opposite Independence Square. In order to earn a little money, and at the same time take up the idle hours with which every young practitioner finds himself encumbered, he began the translation of some medical works, the first being a book on "General Anatomy" by Bayle and Hollard of Paris. The octave volume contained about 300 pages and was finished in two months, the translator receiving as remuneration $200 for his work. His next translation was Hatin's Manual of Obstetrics, a small work which was finished in three weeks, the compensation being $75.

Dr. Gross, in his autobiography, writes: "I sent a copy of this little book, immediately after its publication, with a polite note to the late Dr. Dewers, professor of midwifery in the University of Pennsylvania, who, however, took no notice of either. Meeting, soon after, the wife of my first preceptor, Mrs. Swift, Dr. Dewers referred to the subject, and he observed that I might be a clever and promising young man, but that the faculty of the University could take no notice of anything that emanated from the Jefferson School. I mention this fact simply to show the state of feeling that existed at that time between the two institutions."

---

*Read before the Hennepin County Medical Society, December 7, 1903.

His third translation was "Hildebrand on Typhus Fever," a German work of much celebrity in its day. It was completed in two months. The remuneration was $175. "Tavernier's Operative Surgery" was his next effort. This work comprised two octavo volumes of nearly 500 pages each, and was rendered into English in less than three months, translating from twenty to twenty-five pages a day. This was the first treatise on operative surgery every published in the United States. For his labor $400 was received. These were the only translations ever made by him.

Having completed this work, he immediately began the composition of an original work which was issued in the autumn of 1830, entitled "The Anatomy, Physiology, and Diseases of the Bones and Joints." The work had a good sale. In speaking of this venture Dr. Gross says: "I need hardly remark that young as I was when this book was issued, I had to depend for the facts mainly upon the labors of others, though in the composition of it I used my own language. I had not the experience, however, requisite to make the work what it should be."

Thus was spent the first eighteen months of his professional life. Little time could have been given to society or to making acquaintances, without whom a young professional man can do but little.

The first year's practice yielded him scarcely $300, not enough to support him, yet, in spite of this, he married a young widow with one child. Being compelled to leave the city, they moved to Easton, Penn., where, after a short time, a fair practice was established. In October, 1833, a position was offered him as Demonstrator of Anatomy in the Medical College of Ohio, at Cincinnati, which he accepted, and with his wife and two little children he soon began the overland journey which required thirteen days to complete. Arriving in Cincinnati with less than $130, he at once established a home, and began his labors in the college, which, with the little practice he gained, made for his family a very modest living.

In 1835 he severed his connection with the Medical College of Ohio, because the faculty was at that time a weak one, and a better position was offered him as professor of pathological anatomy in the medical department of the Cincinnati College. His colleagues were Doctors Daniel Drake, the founder of the school; Joseph Nash McDowell, Langdon C. Rives, John P. Harrison, Horatio G. Jameson, James B. Rogers, and Willard Parker.

In 1839 this school was discontinued, Parker having accepted the chair of surgery in the College of Physicians and Surgeons of New York, and Drake that of pathological anatomy and clinical medicine in the Louisville Medical Institute, better known later as the University of Louisville.

By this time Dr. Gross had acquired a large and lucrative practice, but this did not deter him from continuing his writings. In 1839 he issued his work on "Pathological Anatomy," in two octavo volumes of more than 500 pages each. This was the first attempt ever made in this country, or, indeed, in the English language, to systematize the subject, and to place it in a connected form before the profession. This work went through three editions, the last being published in 1857, and may be said to be the foundation upon which was builded his future reputation.

In 1840 he was offered the professorship of surgery in the University of Louisville, with a guarantee of $3,000 a year. This was accepted. The class during the first winter numbered 204, and was afterwards increased to 406. The net proceeds of each chair amounted, for quite a number of years, to about $5,000 annually.

In 1849 an attempt was made by the City of Louisville, through the Supreme Court of Kentucky, to wrest the government of the school from the hands of the men who had managed it so well, and to make the board elective by the people. In this unsettled state the chair of Surgery in the University of the City of New York was offered him, and was accepted. The guarantee was $4,000. The doctor writes: "Accordingly I passed the winter of 1850-51 with my wife and three of my children in New York. The winter was decidedly the most charming I have ever spent. My labors were comparatively light. I had four didactic lectures and two clinics a week; and as I had but little private practice I gave myself up to sight-seeing, the theater and the opera, private parties, and visiting the hospitals. I also attended a course of lectures on the microscope by Mr. Goodby, an English gentleman, and spent much of my leisure upon the composition of my work on 'Urinary Organs,' commenced several years previous, and completed a short time before the close of the lectures."

I quote this verbatim that you may have a better understanding of what he considered an easy, restful time. Paul F. Eve succeeded Dr. Gross as professor of surgery in the University of Louisville.

The suit that was pending having been settled in favor of the trustees, and Dr. Gross not being pleased with the New York school, he yielded to the solicitation of his colleagues to return to Louisville and occupy his former place in the University.

In 1851 was published a "Practical Treatise on the Diseases, Injuries and Malformations of the Urinary Bladder, the Prostate Gland, and the Urethra." It was an octavo volume of 925 pages. The doctor writes: "In an appendix of twenty-nine closely printed pages is the first and only attempt ever made by any writer, as far as I am aware, to furnish a complete account of the prevalence of stone in the bladder and of calculous disorders in the United States, Canada, Nova Scotia, Europe, and other countries. The preparation involved an immense amount of labor in the way of correspondence, extending through a period of several years, and yet, up to the present time, I have never seen it referred to by any writer, either American or European. Such is reputation, such the reward which one obtains for one's labors!"

"A Practical Treatise on Foreign Bodies in the Air Passages," was issued in 1854, in an octavo volume of 468 pages. Its composition required over two years. This was a pioneer work upon the subject. In 1856 the chair of surgery at the Jefferson Medical College was made vacant by the resignation of Dr. Mutter. The position was at once offered Dr. Gross, and, after some hesitation, because he and his family had become much attached to the people of Louisville, where they had lived sixteen years, he decided to accept the call, moving to Philadelphia in September of the same year. His own library, when he left Louisville, consisted of nearly four thousand volumes. Half of them were placed in boxes, and deposited for safe keeping in the University of Louisville. On the 24th of December the University was totally destroyed by fire. The loss included the finest and most extensive collection of books on the genito-urinary organs which had ever been brought together in this country. There was no insurance upon the books, nor upon a large mineral collection which was destroyed at the same time.

Previous to the War of the Rebellion two-fifths of the students at Jefferson were supplied by the Southern States. On the evening of the 23rd of December, 1861, shortly before the secession of South Carolina, two hundred Southern students withdrew in a body. Previous to this time the school numbered the largest classes of any in the United States. After the war the Southern patronage was again very generous.

In 1857 was founded the Philadelphia Pathological Society by Doctors S. D. Gross and J. M. DaCosta. It has ever been a prosperous society, still meeting, as it did then, every two weeks.

After moving to Philadelphia Dr. Gross confined his business to office and consultation work and surgical operations. Having, for several years previous to leaving Kentucky, been preparing a work on surgery, he at last, in 1859, had published "Gross' System of Surgery," which he thus dedicated: "To the numerous pupils who, during the last quarter of a century, have attended the lectures, and who are now settled in every section of the United States, in the honorable pursuit of their profession, these volumes designed to illustrate one of the most important and valuable branches of the healing art, are respectfully and affectionately inscribed by their friend, the author."

This work consisted of two octavo volumes of two thousand three hundred and sixty pages, profusely illustrated. Although this surgery proved to be the most popular and classic of its day, and passed through numerous editions, the author received only 85 cents a copy, a miserable compensation for such exhausting labor. "Literature," says Horace Walpole, "has many revolutions; if an author could rise from the dead after a hundred years, what would be his surprise at the adventures of his works!" Dr. Gross writes: "Professional works, however erudite or scientific, are usually short-lived. Few survive their authors, and hardly one remains in active circulation beyond fifteen or twenty years."

So rapid, indeed, have been the changes since this was written that the life of most books could well be said to terminate in from five to ten years.

I will not this evening tire you with a recital of the many contributions to medicine and surgery, as well as to literature, made by Dr. Gross, but content myself, in closing, by referring to two papers, the proofs of which he corrected during his last illness. One was "Wounds of the Intestines," and was read before the American Surgical Association by his friend and former pupil, Prof. T. G. Richardson, of New Orleans, on April 30, 1884.

The other was entitled "Lacerations of the Female Sexual Organs, Consequent upon Parturition; Their Cause and Their Prevention," and was read two days after his death by Dr. S. C. Busey, before the American Medical Association. He died thus engaged in the work he loved so much, fully up to the existing state of knowledge in the profession, although seventy-nine years old.

He assisted in founding the Kentucky State Medical Society, of which he was afterwards made president; was president of the Pennsylvania State Medical Society; honorary member of the Pathological Society of London; the originator of the Philadelphia Academy of Surgery and of the American Surgical Association, and became president of both; and was also president of the American Medical Association.

The degree of LL.D. was conferred upon him by the University of Cambridge, England, and of D.C.L. by the University of Oxford.

It was the desire of Dr. Gross that his body be cremated, which was accordingly done at Washington, Pennsylvania, and the ashes deposited in Woodlands cemetery, next to the coffin of his wife, who had preceded him.

It seems wrong to pass thus hurriedly over the life of so great a man, but in the fifteen or twenty minutes you have so kindly allotted me I can only touch upon the most prominent historical points of his life.

Aside from his professional attainments, his character and greatness of heart commanded at once the love and admiration of those who knew him. Every young man in the class felt and knew that, as long as he did it right, he had a friend in Professor Gross. He took a special interest in every one of us, and never were we turned away lightly or hurriedly when we asked his advice or assistance.

His son, Samuel W. Gross, succeeded him as professor of surgery, and died a few years later of pneumonia, in the very prime of his life. I cannot miss this opportunity of saying that he was the grandest lecturer it has ever been my fortune to hear.

THE DANGER OF WOUND INFECTION AS A RESULT OF SPEAKING AT SURGICAL OPERATIONS.

Dr. Mendes de Leon (Archiv. fur Klinische Chirurgie, Bd. 72, Heft. 4) says it is a well known fact that in speaking we throw out a considerable amount of saliva in finely divided particles, and nowhere do germs grow more luxuriantly than in the mouth, and it is a matter of actual experience that the injection of saliva into the peritoneum of a mouse resulted in the death of the animal as often as the experiment was performed by Miller. It may be mentioned that this saliva was taken from one hundred and eleven healthy people. Our author found out from various surgeons how many words they were accustomed to utter at the average surgical operation, and then spoke the same number of words with sterilized petri dishes before his mouth. In no instance did he fail to cultivate numerous colonies of all sorts of pus germs. Strange to say, the results were not just the same when he simply infected the dishes with saliva alone as when he spoke against the dishes. In order to prove that his germs were virulent, he injected them into sixty-one different animals, and was able in practically every instance to demonstrate inflammatory lesions of one sort or another. A number of experiments were made to disinfect the mouth, but this was found absolutely impossible, so the author suggests that a cotton pack be worn as a sort of mask, with which he was able to prevent any infection of the petri dishes.

ST. BARNABAS HOSPITAL

MINNEAPOLIS

A CASE OF APPENDICITIS WITH OBSTRUCTION

In the Service of Dr. G. G. Eitel

Herman S——, aged 10, family and patient's past history negative.

Present Condition.—On the 4th day of June, 1904, the patient was suddenly taken ill with pain in the region of the stomach, accompanied with nausea and vomiting. The pain increased in severity, and became localized at McBurney's point. Dr. G. E. Strout, of Winthrop, was called and diagnosed the case "appendicitis of a severe form."

June 6th the patient was brought to St. Barnabas Hospital with a temperature of 105°, abdomen greatly distended (measuring 36 inches around the body), and vomiting. It was impossible to get either feces or flatus to pass per anum.

The patient being in a very desperate condition, and as we feared that a general anesthetic would be too severe, three syringes full of a one-fourth per cent solution of cocaine was injected in line for a McBurney incision. The abdominal wall was carefully cut through, and quite a quantity of peritoneal fluid encountered, but no inflammatory condition in the right iliac fossa; however, quite a mass in the pelvis could be felt by the index finger. As this mass was too great a distance for sap drainage from the incision, it was deemed better to make a median incision, and we made one three inches in length. The bowels were packed away from the inflammatory mass and protected from any pus that might be encountered. About three ounces of pus was evacuated, and also a good sized fecal concretion. Drainage by means of a one-half inch rubber tube and iodoform gauze was established. Before making the median incision and packing the intestine out of the way, the patient was given a little ether to inhale, also hypodermoclysis of a pint and one-half of normal salt solution.

Patient seemed to improve after operation until the third day, when the tympany increased and he began to vomit again, the vomitus having a fecal odor. About ten hours after the vomiting began, a loop of intestine at the lateral incision was drawn into the wound, and fastened with a few catgut stitches, and an incision was made into the bowel, from which a very free escape of gas and fecal matter took place, and this produced at once a marked diminution in the size of the abdomen; and cessation of vomiting.

Patient soon developed a great appetite, and was given plenty to eat. On the 4th day he had a small but natural bowel movement.

June 26th, patient was etherized, the anchored bowel liberated, the fistule closed with fine silk and returned into abdominal cavity, and a strip of gauze carried down to the sutured intestine as a safeguard. The abdominal wound was left open. The gauze drain was removed on the third day, after which the abdominal wound promptly closed.

Patient was discharged in good condition on July 3d.

OVARIAN CYST—TWISTED PEDICLE

In the Service of Dr. Hunter

Case.—Girl, aged 15.

History.—Negative, except frequent, free, painful menstruation. Last period a week ago.

Present Illness.—Began July 7th, 12 m, after eating freely of peanuts, with sharp pain in abdomen and vomiting; pain continued throughout the night; no result from repeated enemas.

I first saw the patient 24 hours after the attack began; found her sitting in chair suffering intensely with greatest tenderness in right iliac region. I thought it to be connected with the appendix, though swelling was too low for appendiceal abscess. The condition indicated laparotomy. She was taken at once to the hospital and prepared for operation. Under anesthesia the swelling was easily marked out as above, and was seen not to be connected with the appendix, but from the pelvis, and so we thought we had to deal most probably with an inflamed ovarian cyst, which, on incision, proved to be the case, the inflammation being due to the twisted pedicle, and this, in turn, was due to the acute indigestion following the eating of a large amount of peanuts. The value of early laprotomy without loss of time debating diagnosis is illustrated by this case.

THE OVERCROWDING OF OUR HOSPITALS

During the past year so many complaints have been made by physicians in Minneapolis of the frequency with which they are unable to get their patients into the hospitals, that it has been thought it might prove interesting to determine the exact hospital capacity of the city. The figures are as follows: City Hospital, 210 beds, 60 of these being in the contagious wards; St. Barnabas, 80 beds; Swedish, 80 beds; St. Mary's, 75 beds; Asbury, 53 beds; Northwestern, 50 beds; Norwegian, 35 beds. Total 583, or, excluding the City Hospital which is in a class of its own, there are just 373 beds in this city at the disposal of the medical profession and the public. This is, on the face of it, an incredibly small number for over 500 physicians, and we must consider, moreover, that these beds are necessarily used as well by a large number of practitioners throughout the state in the smaller towns and country districts where there are no adequate hospitals at their command.

It is, therefore, not surprising to hear that, without exception, each hospital asserts that its capacity is practically always stretched to its utmost limit, that patients are frequently turned away, and that physicians are constantly unable to obtain the rooms they require for their patients. Within the past year there has scarcely been a day when all of the 80 beds at St. Barnabas have not been filled, and over 200 patients sought entrance there in vain. During the busy season Asbury complains of turning away as many as six or seven a day. The Northwestern has found itself so cramped for room that it has already branched out, and the foundation of a second building is completed.

There is no reason to believe that there will be any decrease in this demand. On the contrary every year the public is becoming more educated to the advantages of hospital care over that possible in the home, and every year the old-time prejudice against the hospital is less evident. In illustration of this fact, I may quote a remark which a young girl, the patient of one of our practitioners, made to her nurse. She had entered the hospital for an operation for appendicitis, rather in opposition to the wishes of both parents. Her remark was, "People will soon not be afraid to come to the hospital, as operations now-a-days are so successful." The use of hospital facilities is bound to increase in greater ratio than population.

In the face of these facts there can be no question as to what is needed. The interests of the public, no less than those of the profession, are intimately concerned in the matter, and could the subject be properly presented to them there is little doubt that they would arise to the necessities of the occasion, and that the required financial support would be forthcoming. But that which is primarily needed is concerted action on the part of the profession. As is often remarked, this is an age of unifications. Small interests are rapidly consolidating into large movements all about us, and it need not be considered beyond the realm of the possible that the day is approaching when the best interests of the medical profession will be seen also to lie along the direction of combined forces. That this is already gradually occurring is witnessed by the constant, if more or less spasmodic attempts at union among the all too numerous medical schools throughout the country. In Europe this tendency is more marked, and the city of Vienna with its one great hospital shows what it is possible to do along these lines.

Could the medical men of this city unite upon a plan which would give them better facilities, and at the same time unify the various hospital interests, the benefits to them from a professional and economic standpoint would be very great, while the increased opportunities for a nurses' training-school and for the medical schools would react inestimably to the advantage of the public.

* * *

SWEDISH HOSPITAL

MINNEAPOLIS

NECROSIS OF SOFT PARTS FOLLOWING ENORMOUS SUBCUTANEOUS INJECTIONS OF ADRENALIN

In the Service of Dr. F. A. Dunsmoor

March 2d, 1904, Mrs. F. A. P——, aged 18, was delivered of her first child by Dr. N. M. Cook of this city. Nothing unusual occurred at the confinement, and Dr. Cook reports no septic case seen by him at any time, and that he has never seen a fatal case in midwifery, and was certain he was surgically clean in the case. Four days later the grandmother, acting as nurse, reports that a piece of after-birth, large as a goose egg, came away, and the patient was very shortly in high fever with the usual symptoms of puerperal infection.

I saw the case in consultation the next evening, when the temperature was 105°, pulse 130, abdomen distended, tympanites, face anxious, lochia diminished, and general condition bad. I recommended intra-uterine irrigation, strychnia, and calomel, and that the patient be sent to the hospital that a pan hysterectomy might be made. There was some delay so the patient was not admitted to the hospital until 6 p. m., March 8th, much prostrated, temperature 104.5°, and pulse 124. Hoping to get patient in condition for operation next morning, I ordered stimulants, strychnine, ice-pack to head, intra-uterine douche, and hypodermoclysis, normal saline solution Oii, sol. adrenalin ʒss, to be given every six hours, first under breasts, next in the thighs. The interne misread the directions and made the solution 3 per cent adrenalin solution, thus giving an ounce of the 1-1000 solution in one quart. It is not probable that after the first the entire quart was given in the three following injections. The mistake was not discovered until my attention was called to the necrosis, which included the skin, fascia, adipose and all tissues down to muscle over an area of thirty square inches below left breast in the first instance, with lesser destruction in each of the other points of administration.

The case was seen by Drs. J. H. Dunn, J. W. Little, A. A. Law, and other physicians about the hospital, and their opinions was that she would not survive hysterectomy. The house officer reported that "she had a pulse like a horse" after a hypodermoclysis, and the temperature fell to 100°, and the pulse to 120, immediately rising to 105°, pulse 135 to 150, and making the usual zigzag between 105° to 100° daily. Involuntary dejections, tremor, sweating, and diarrhea continued until complete separation of the slough of breast and thigh on the 23d of March. There was irritating cough, neuralgia of face and head, and mental disturbance for complications during the first fifteen days. The temperature varied from 98.5° to 101° from March 23 to April 17, when she was discharged.

On April 2d, with the assistance of Dr. J. W. Little and Dr. Cook, I re-covered the exposed muscle on the chest with Tiersche's skin grafts (removed from her husband), which made immediate union, and produced as good results as if on a patient in perfect health.

April 16th, under cocain anesthesia, margins of skin wound about the slough in the left thigh were freshened, and skin and fascia separated from the muscles and drawn together by sutures.

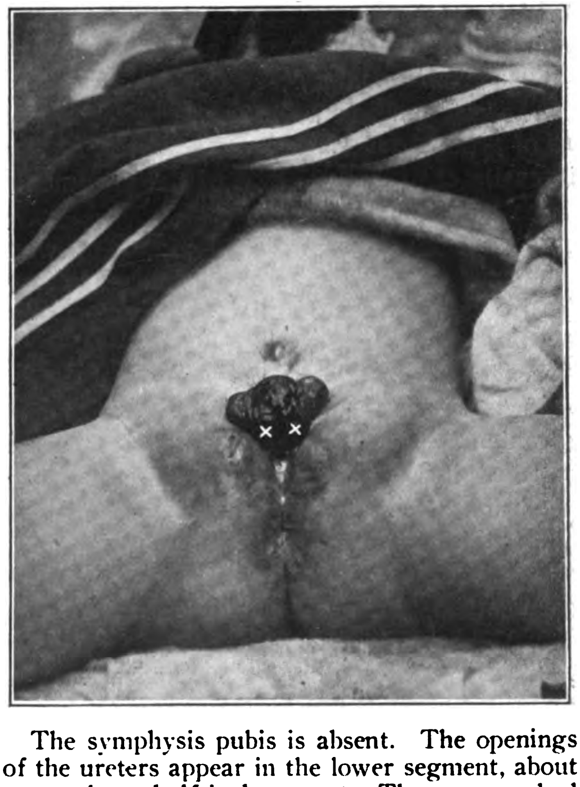
The case is reported, not with any idea of depreciating the value of the adrenalin solution, but, rather, to show its power as a hemostatic, as well as to consider if this drug should not have the credit of saving the patient's life in spite of the sloughing caused by the excessive dose. The solution was certainly absorbed even after it had completely shut off the circulation to the superimposed tissues. It is evident that a 3 per cent solution injected by the side of an artery of the size of those supplying the chest-wall will control the vessel as if tied. At the same time its stimulating power of heart and general circulation will be markedly manifest. I have frequently applied the full strength of the 1 to 1000 solution to abraded surfaces within the abdominal cavity on torn intestine or messentary with much benefit, and no bad symptoms have followed. The strength of the solution to be used hypodermically when confined in small space must be considered with care, since the fact is proven that a solution of 3 per cent is competent to so constrict the artery as to shut out nutrition to the area that is supplied from the artery in which the solution is in contact.

FAIRVIEW HOSPITAL

CLOQUET, MINN.

CONGENITAL EXSTROPHY OF THE FEMALE BLADDER IN A CHILD TWO YEARS OLD

IN THE SERVICE OF DR. C. D. HARRINGTON



The symphysis pubis is absent. The openings of the ureters appear in the lower segment, about one and one-half inches apart. They are marked by crosses on the photograph.

The parents of the child refused an operation, and the case was not seen again.

CLINICAL MICROSCOPY

CONDUCTED BY GEORGE DOUGLAS HEAD, M. D.

IODINE REACTION IN THE BLOOD OF CHILDREN

While considerable work has been done by Cabot, Locke, Swan, and others upon iodophilia in the blood of adults, little or none has been reported upon the blood of children. Dunn (Boston Med. and Surg. Journal, Nov. 5, 1903), gives a resume of his work upon the iodine reaction in 128 children suffering from various diseases. Of the 22 cases of lobar pneumonia all gave a positive reaction, about 70 per cent of the neutrophile leucocytes being affected.

In all the cases ending by crisis the reaction had disappeared by the fifth day after the crisis. In the unresolved cases the reaction persisted for ten to fifteen days.

In 8 cases of bronchopneumonia the reaction was present in all, and also in 4 cases of influenza pneumonia.

The reaction was positive in 9 cases out of 10 of typhoid fever. It was, however, of less intensity than in the blood of the pneumonia cases, and persisted longer.

Five cases of cerebrospinal meningitis were examined, in all of which the reaction was present.

In 6 cases of acute miliary tuberculosis the reaction was positive, while in 2 it was negative.

In some cases of secondary anemias and chronic nephritis the reaction was present and in others it was absent.

Four cases of empyema were examined, in all of which the reaction was present.

Cases of pleurisy with effusion, articular rheumatism, chorea, infantile atrophy, congenital heart disease, and in single cases of bronchitis, eczema, purpura, urticaria, and scorbutus exhibited no reactions.

LEUCOCYTE COUNT IN APPENDICITIS

The value of a white-blood count in the diagnosis of appendicitis continues to interest surgeons and hematologists.

Federmann (Central bl. f. Clin., Leipzig.

Federmann (Central blat. f. klin Med., Leipzig 1903, No. M. 36) reports the leucocyte counts in 150 cases of appendicitis. There were 25 cases of appendicitis with serofibrinous exudates. These showed a leucocytosis usually below 20,000, but sometimes as high as 28,000. All of the 70 cases with a circumscribed suppurative peritonitis began with a marked leucocytosis, 20,000-30,000, which generally fell to 10,000-15,000 within the first five or six days, rising again if there was extension of the abscess.

Of free spreading peritonitis there were 26 cases. In these the count was 20,000-30,000 within the first 24 hours, and remained at this height for two days, falling on the 4th day until death or operation. Federmann believes that the leucocyte count is a symptom of the disease, like abdominal pain, etc., and is only of value when considered along with other clinical signs and symptoms, especially the temperature and the duration of the patient's illness.

DIAGNOSIS OF MALIGNANT TUMORS

In the Deutsches Archiv fur Klin Med. bd. lxxvii, hft. 5 u. 6, Kurpjuveit has an article upon the diagnosis of bone marrow metastases of malignant tumors by blood examination. He cites two cases reported by Frese three years ago in which there was a marked leucocytosis and the presence of myelocytes in the circulating blood. He adds 4 new cases of like character observed in the Konigsberger clinic within two years, together with 13 cases collected from the literature in which the blood findings were those of a pernicious anemia with a marked increase of white cells. Especially characteristic were the high percentage of myelocytes, 4-17 per cent in the various cases. The author expresses the opinion that by a study of the blood the diagnosis of metastatic growths of malignant disease in the bone marrow can be made "nicht so selten."

NORTHWESTERN LANCET
A SEMIMONTHLY MEDICAL JOURNAL
The Official Organ of the Hennepin County Medical Society
W. A. JONES, M. D..................EDITOR
Editorial Office, 515 Pillsbury Building
W. L. KLEIN, PUBLISHER
SUBSCRIPTION, $2.00 A YEAR.
839-840 Lumber Exchange.....................Minneapolis

JULY 15, 1904

THE A. M. A. MEETING

The registrations at Atlantic City numbered over 2,900, the largest number present at any recent meeting. Men of prominence from all parts of the country and from abroad were in attendance. The sections were full, and every moment occupied. The meeting places on the various piers were ideal with one exception. The general sessions and the session on practice were located in Young's Pier, a noisy place, so much so that a church in town was secured for the work after the first day.

The hotel accommodations were ample, the board-walk was thronged with a cosmopolitan mass of moving men, women, and rolling chairs. The smokers and vaudeville performances were well attended.

One smoker at the *American Garden* entertained thousands, including doctors and ladies accompanying them. Thus the ladies had an opportunity of attending a real smoker, and they apparently enjoyed the novelty which included beer, sandwiches, smoke, and vaudeville.

One smoker at the *Rudolf* was strictly a stag affair, of which little is known except by those who were there. As it began at 11 p. m. it was late in disbanding, yet no headaches were noticeable the following morning.

The weather was delightful, except for a few hours of Thursday, then the inlander saw a storm on the sea and heard the breakers roll against the sea-wall.

Dr. McMurtrie, of Louisville, was elected president, receiving but six votes more than Dr. W. J. Mayo. The latter-named and evidently popular man seems likely to be the president next year.

The next meeting place is Portland, Ore.—a small city unequal to the enormous demands of a large organization. In the opinion of many it is unwise to select a city where the hotel accommodations are inadequate, particularly when an exposition is in progress. Columbus and New Orleans proved unequal to the task, and on these experiments many of the members will refrain from attending.

The popularity and interest of the A. M. A. will, however, draw a crowd wherever it is in session, and Portland will do all in its power to take good care of the docters. The opportunity afforded to visit the far west will doubtless attract many who will make Portland a stopping place only, hurrying on if the accommodations are not encouraging.

SIDE-LIGHTS OF THE A. M. A.

MAHOMET MAYO, OF MECCA, MINNESOTA

When Dr. W. J. Mayo read his oration on surgery he was introduced by the first vice-president, Dr. Sargent, as Dr. Mahomet Mayo, of Mecca, Minnesota.

The meeting-place was full and the orator was listened to closely while he read his address on "Surgery of the Upper Abdomen." His large experience in this line of work made his address notable. Eastern men and surgeons old in years and experience paid deferential attention to this young surgeon who has achieved worldwide fame.

Everyone knows of the Mayos, and all speak of them with the highest respect.

Minnesota may again congratulate herself.

SURGICAL AMUSEMENTS

The annual appendiceal vaudeville matinee performance gave a lively entertainment at the Steel Pier Wednesday afternoon, June 8, 1904. The crowd was great, and the applause, laughter, and enthusiasm were constantly in evidence. The actors were all well known, and knew their parts perfectly. The frequent repetition of the entertainment, year after year, perfected them in their various dramatic and comedy parts. Each was greeted with shouts and tumultuous hand-clapping as they appeared upon the stage. Each actor had favorites in the audience, and the utmost good will prevailed during the elocutionary criticisms and denunciation of the actors when their turn came for the vaudeville.

The title of the play was *Appendicitis* (with an *itis* or an etis, whichever you or the actors choose). One man would adjust himself for his part, read his statistics, shout his opinions and preferences, and disappear. The next man would instantly appear, give other statistics, and loudly denounce the performance of his immediate predecessor. One would stamp vigorously with his foot to emphasize his part, and, if a large screen or a piece of furniture tipped over with a loud crash, it added zest to the show. Another would tell stories flooded with humor, in his experience with the elusive appendage, then urge his audience to remove every appendix from every abdomen that offered the least resistance to light pressure with the tip of the little finger, a diagnostic acquirement that outclassed *x*-rays, *n*-rays, or knife rays.

The next speaker was modest, and by slightly winking one eye said no cases of appendicitis died in the city that was magnified and honored by his presence.

One man had operated 16 cases of general peritonitis with but one death, and that was purely incidental, due to disease and feeble power of resistance, not to the knife. The other actor jumped upon the stage, and in a voice of conviction said he had operated 16 cases of general peritonitis with no death, thus casting the previous actor entirely in the shade as incompetent and unworthy of further notice.

The matinee was prolonged until long after six o'clock.

It was a great performance, a good deal like a Wagnerian opera. Somehow when it was over the audience did not know whether to operate or not. If they decided to operate the question of *when*, *how*, *which*, or *where*, left them still more in doubt, and was finally settled by the majority in this simple proposition, which is so clear and easy that any one may follow it: Operate on every one that you can lay hands on; operate early, before they can get away or change their minds. At all events, operate.

MONOTONOUS, BUT INTERESTING AND VALUABLE

The social and news items, which occupy a page or more in each issue of The Lancet are, like the detached words in the columns of a dictionary, monotonous reading, but they are very interesting and very valuable. Two or three statements appear very monotonously in many of these items, telling in almost identical expressions, because of the limitations of language, that Dr. ——, a recent graduate of Hamline or the State University, of Rush or Johns Hopkins, has located somewhere in the Northwest, or has gone abroad, or has joined a hospital staff or started a hospital in some Northwestern town whose very name may not be known to many of us or may not appear in our most recent gazetteers.

Has such a record no interest for us older practitioners? Must we take no note of these young chaps who are starting out in the world, side by side with us? Perhaps we think little of it, saying to ourselves that they have no experience, and the public will be slow to give them practice; but what have these young men been doing the past eight or ten years, four in college, four in a high-grade medical school, and one or two in some large city hospital, with perhaps a year or so in Europe? Must we take no note of these facts, either because of what they mean to us personally or to the public because of an advancement in the knowledge of medicine and surgery and the consequent benefits conferred upon the public? The man who does not read these plain signs of the times, and keep himself at least abreast of these young fellows, will fall behind in the race and will fail in his duty to himself, his family, and the public.

The people and the medical profession of the Northwest are to be congratulated that such men are locating here; and some of the present generation will see the beneficent results of their work, while future generations will be, even in a larger degree, the benefactors of the conditions (medical laws and medical ideals), created almost wholly by medical men now living, which make for this advancement.

We believe The Lancet can never give too much space to its department of "News Items," and that the medical man who fails to read such news shows a symptom of a lack of health.

BOOK NOTICES

IMMUNE SERA: HEMOLYSINS, CYSTOTOXINS, AND PRECIPITINS. By Prof. A. Wassermann, M. D., University of Berlin. Price, $1.00, New York: John Wiley & Sons.

This beautifully printed little book of seventy odd pages has greatly excited our interest. These lectures of the past winter give Dr. Wassermann's effort to present "the results of these investigations * * * found applicable to many clinical questions * * * to the medical profession at large."

A few pages on "Hemolysins" which includes alexins, artificial immunity, bacteriolytic power of serum, nomenclature, Ehrlich's side-chain theory with diagrams and cuts to make the argument intelligble, lead to "Cytotoxins" and "Precipitins" and to the "Conclusion," which especially treats "Clinical Applications of Immune Sera," and though the treatment of the subject seems thin, we must remember that this phase of biological chemistry is new and difficult, but the elements are here, and will give the reader a profitable half hour.

The translation seems well done.

MUSSER'S MEDICAL DIAGNOSIS.—New (5th) edition. A Practical Treatise on Medical Diagnosis for Students and Practitioners, by John H. Musser, M. D., Professor of Clinical Medicine in the University of Pennsylvania, etc. New (5th) edition, revised and enlarged. In one octavo volume of 1213 pages, with 395 engravings and 63 colored plates. Cloth, $6.50; leather, $7.50; half morocco, $8.00, net. Lea Brothers & Co., Publishers, Philadelphia and New York.

The appearance of this popular volume, the fifth edition, much enlarged to twelve hundred pages, and carefully revised along systematic methods of diagnosis, is proof of the popularity of the book, and that the plan of thus bringing together between two covers all the methods of medical diagnosis is liked by the profession at large. Certainly students taken through this volume should learn ways whereby none of the methods of sound diagnosing can escape them.

The writer of this notice recalls a German review of an early translation of DaCosta's pioneer volume in this sort of work in which this whole scheme was condemned because in seeking to cover so much, condensation by the compiler would lead to an unauthoritative superficiality. However, such books as DaCosta's, Vierordt's, Butler's, and this most ambitious attempt of all Musser's make their way. We do not recall that they have had many imitators among British or French authors. As attempts also have been made to apply the same methods in teaching surgical diagnosis, we may conclude that these books represent sound and practical methods of teaching, though certainly for one who goes far in blood work or urinalysis the twenty and forty odd pages devoted to these subjects, respectively, found in Musser, will scarcely suffice. The one-book library will not do. Duplication must occur.

In print and illustration the work of the publishers is of the best.

VON BERGMAN'S SURGERY. To be complete in five octavo volumes, containing 4,000 engravings and 110 full-page plates in colors and monochrome. Per volume, cloth, $6.00; leather, $7.00. Vol. II. now ready. Philadelphia: Lea Bros. & Co.

Vol. II., treating the surgery of the neck, throat, and spinal column, has followed quickly the appearance of the first volume of this truly monumental work, which, our readers will recall, was recently noticed in these columns.

The work of the above-named regions is entered upon at once with an account of those interesting openings occasionally met with about the neck. Twenty pages, with eight large cuts, follow as the subject of wry-neck.

Chap. II., with four full-page colored plates as an anatomical basis, is devoted to injuries of the vessels of the neck. Thirty illuminating pages are devoted to the lymph glands with fine cuts showing points of infection and distribution. There is no doubt that radical incision is the safest treatment.

The spirit of these volumes is shown in the following excerpt from "Foreign Bodies in the Air Passages": "In cases in which suffocation is imminent there is usually no time for diagnosis. The thing to do is to act." This indeed, is sound exposition, and is explicit instruction for action.

The illustrations of intubation (Lejars) we know to be good.

A full chapter is given to goitre, including injection and therapy (iodine).

Penetrating wounds of the chest continue the chapters, some new cuts and studies in heart surgery appearing. A suggestive cut of a sarcoma of the rib, following an injury by a base-ball, is credited to Dennis. Nowhere does the work of the editors appear distinct from the original text, unless in these cuts, thus differing from the plan pursued by the American editors of Nothnaglel's Practice, the medical analogue of this great work.

Empyema is fully covered and illustrated.

The breast receives fiftv pages.

The last two hundred pages are given to the spinal cord and column by Prof. Henle with the illustrated orthopedic apparatus.

We can commend these volumes unreservedly to our readers. The intending purchaser may be sure he is getting full value in well considered, well dressed surgical instruction.

INTERNATIONAL CLINICS. Vol. I. Fourteenth Series. Price $2.00. Philadelphia: J. B. Lippincott & Co.

This quarterly publication of Lippincott is a very welcome volume, and is now furnished at a reasonably low price; indeed, the price is much lower than almost any other good medical matter in book form that comes to our table.

Its general characteristics are well known, and need no description.

The opening clinic in this volume is by Widal and Jarval, and is a study of nephritis and the effects of common salt in some forms of parenchymatous varieties, and a carefully studied food treatment worked out.

A study of the "Treatment of Pneumonia," by Dr. Davis of Chicago, is worthy of special commendation. The old use of calomel, ammonium chloride and venesection is advocated. The use of whiskey is condemned, and the use of strychnia is commended. Venesection is lauded, for selected cases. Can it be that this remedy is not used sufficiently to really test its value, because there is such deplorable lack of unanimity of text-book teaching about it?

Some of the young members of the profession could not set themselves a more profitable task than the study of the records of the cases of this disease and its treatment as found in our local hospitals the past few years.

A review of the progress of medicine by Dr. Edsall and of surgery by Dr. Bloodgood and of treatment by Dr. Stevens closes the volume.

NEWS ITEMS

Dr. A. J. Heimark, of Chicago, has located at Finley, N. D.

Dr. R. W. Huffman has moved from Felton to Georgetown.

Dr. Ireland has moved from Williston, N. D., to Glendive, Mont.

Dr. R. S. Mitchell, Hamline, '03, has located at Grand Meadow.

Dr. C. M. Brimi, of Cooperstown, N. D., is visiting hospitals in the East.

Drs. W. J. and C. H. Mayo have given Rochester $5,000 for park purposes.

Dr. Walter Christensen, a recent graduate of Hamline, has located at Lidgerwood, N. D.

Dr. C. E. Gray, who graduated from the State University this year, has located at Kellogg.

Dr. R. A. Morrill, a recent graduate of the State University, has located at Berwick, N. D.

Dr. W. V. Gulick, of Oronoco, has returned from New York, where he has been for special study.

Dr. S. J. Meek, of Winsted, died last month. Dr. Meek was a graduate of the University of Michigan.

Dr. A. M. Webster, of Minneapolis, has purchased the practice of Dr. F. H. Ehlman, of Alma, Wis.

Dr. W. W. Johnson, State University, '02, and Miss Laura Jones, both of Geneva, were married last month.

Dr. George Stevens, a graduate of Rush, has located at Byron, having purchased the practice of Dr. Pettit.

Dr. W. W. Mayo, of Rochester, is a member of the committee that will notify Judge Parker of his nomination at St. Louis.

The buildings of St. John's Hospital at Fargo, N. D., are nearing completion. Over $100,000 will be required to complete the improvement.

Dr. Morrill E. Withrow, Hamline, '00, was married last month to Miss Agatha L. Mahoney, of Anoka. Dr. Withrow is now practicing at International Falls.

Dr. C. E. Gray, of Minneapolis, State University, '03, has located at Kellogg. Dr. Gray was a year in St. Barnabas. He took a bride with him to his new field.

Dr. A. E. Ahlstrom, of Cokato, a graduate of the State University, class of 1900, died July 3d of heart disease. He had practiced three years in Cokato.

Dr. N. J. Shields of Lidgerwood, N. D. was married last month to Miss Marcy Movius, of the same place. Dr. and Mrs. Shields have gone to Europe for a year.

Dr. C. D. Harrington, now practicing at Cloquet, who for several years was associated with the late Dr. James H. Dunn, will return to Minneapolis, Aug. 1st to resume his practice.

Dr. Chas. T. Granger, of Rochester, has associated with himself Dr. George T. Joyce, of High Forest, who graduated last month from the College of Physicians and Surgeons, Chicago.

The ninth annual meeting of the Sioux Valley Medical Society was held at Sioux Falls, S. D., last month. The following officers were elected for the current year: President, Dr. M. Sullivan, of Adrian, Minn.; vice-president, Dr. R. E. Woodworth, of Sioux Falls, S. D.; secretary, Dr. M. E. Silvers, of Sioux City, Iowa; treasurer, Dr. S. A. Brown, of Sioux Falls, S. D.

PHYSICIANS LICENSED AT THE JUNE (1904) EXAMINATION TO PRACTICE IN MINNESOTA

We publish this list in this form at the request of the State Board of Medical Examiners, in order that the names may be pasted in the Official Register, copies of which are sent free by the Board to anyone who applies for the same and remits five cents to pay the postage.

Abbott, C. U. (R); Uni. of Minn., 1904; July 1, 1904..................Bena
Andersen, A. G. (R); Uni. of Minn., 1904; July 1, 1904.........Minneapolis

Ballard, J. A. (H); Uni. of Minn., 1904; July 1, 1904.............St. Paul
Bartlett, W. K. (R); Medico-Chirg. Col. Phil., 1903, July 1, 1904...Minneapolis
Benson, T. J. (R); Uni. of Minn., 1904; July 1, 1904.............Minneapolis
Birnberg, Tobias (R); Uni. of Minn., 1904; July 1, 1904...........St. Paul
Blais, Charles (R); Uni. of Minn., 1904; July 1, 1904............Minneapolis
Brand, W. A. (R); Uni. of Minn., 1904; July 1, 1904...........Minneapolis

Coffin, S. D. (R); Uni. of Minn., 1904; July 1, 1904................Lyndale
Cole, C. V. (H); Uni. of Minn., 1904; July 1, 1904............Fergus Falls
Coria, L. J. (R); Uni. of Minn., 1904; July 1, 1904..............Minneapolis
Crossette, G. D. (R); Uni. of Minn., 1904; July 1, 1904.......Minneapolis

Daugherty, E. B. (R); Uni. of Minn., 1904; July 1, 1904.....Chisago City
Daugherty, L. E. (R); Uni. of Minn., 1904; July 1, 1904..........St. Paul
Devine, J. L. (R); Uni. of Minn., 1904; July 1, 1904................St. Paul
Dittman, G. C. (R); Uni. of Minn., 1904; July 1, 1904.............St. Paul
Dix, G. E. (R); Uni. of Minn., 1904; July 1, 1904..............Minneapolis
Drake, J. H. (H); Chicago Homo. Med. Col., 1902; July 1, 1904..Minneapolis
Dunn, J. T. (R); Uni. of Minn., 1904; July 1, 1904................Waseca

Emmerson, W. S. (R); Uni. of Minn., 1904; July 1, 1904......Minneapolis

Freeburg, H. M. (R); Uni. of Minn., 1904; July 1, 1904........Minneapolis
Freeman, C. D. (R); Uni. of Minn., 1904; July 1, 1904............St. Paul
Frost, W. S. (R); Uni. of Minn., 1904; July 1, 1904..............St. Paul

Gallagher, P. J. (R); Uni. of Minn., 1904; July 1, 1904..............St. Paul
Gallup, G. D. (R); Uni. of Minn., 1904; July 1, 1904.........Minneapolis
Gates, C. E. (R); Uni. of Minn., 1904; July 1, 1904...........Rochester

Giesen, C. W. (R); P. and S., Chicago, 1904; July 1, 1904......Calmar, Iowa
Gowenlock, H. J. (R); Uni. of Minn., 1904; July 1, 1904......Minneapolis
Grimes, H. B. (R); Uni. of Mich., 1903; July 1, 1904.............Rochester
Gunz, A. N. (R); Uni. of Minn., 1904; July 1, 1904..............Centre City

Haessly, S. B. (R); P. and S., Chicago, 1904; July 1, 1904........Herbert, Wis
Higgins, I. W. (R); Uni. of Minn., 1904; July 1, 1904..............Hutchison
Hoff, G. C. (R); Northwestern, Chicago, 1904; July 1, 1904......Zumbrota
Hoffman, W. F. (R); Uni. of Minn., 1904; July 1, 1904..........Minneapolis
Hoidale, A. D. (R); Uni. of Minn., 1904; July 1, 1904............Dawson
Hynes, J. E. (R); Uni. of Minn., 1904; July 1, 1904........Winnebago City

Jern, J. H. (R); Northwestern, Chicago, 1904; July 1, 1904....Superior, Wis.
Johnson, Hans (R); Uni. of Minn., 1904; July 1, 1904...............Willmar
Johnston, E. A. (H); Hahnemann, Chicago, 1903; July 1, 1904..Sigourney, Iowa
Joyce, G. T. (R); P. and S., Chicago, 1904; July 1, 1904........Rochester

Kearney, P. F. (R); Uni. of Minn., 1904; July 1, 1904............Minneapolis
Kelly, T. C. (R); Uni. of Minn., 1904; July 1, 1904..............Garden City
Kermott, L. H. (R); Hamline, 1904; July 1, 1904...............Minneapolis
Kern, M. J. (R); Creighton Med. Col., 1904; July 1, 1904...........Wadena
Kiefer, M. A. (R); Uni. of Minn., 1904; July 1, 1904...........Sleepy Eye
Klemer, C. A. (R); Uni. of Minn., 1904; July 1, 1904..............St. Paul
Kuth, J. R. (R); Uni. of Minn., 1904; July 1, 1904..............Minneapolis

Larsen, C. L. (R); Hamline, 1904; July 1, 1904.....................St. Paul

MacLachlan, T. M. (R); Harvard Med. Sch., 1900; July 1, '04..MeHenry, N. D.
McKibben, H. E. (R); Uni. of Minn., 1904; July 1, 1904....Webster, S. D.
Mattson, J. A. (R); Uni. of Minn., 1904; July 1, 1904..............Dassel
Movius, A. J. (R); Uni. of Minn., 1904; July 1, 1904......Lidgerwood, N. D.

Nickerson, Margaret L. (R); Uni. of Minn., 1904; July 1, 1904....Minneapolis

Ofstad, A. E. (R); Hamline, 1904; July 1, 1904..............Minneapolis
Olander, J. E. E. (R); Uni. of Minn., 1904; July 1, 1904......Minneapolis
Olson, G. M. (R); Uni. of Minn., 1904; July 1, 1904..........Minneapolis

Parnall, C. G. (R); Uni. of Mich., 1904; July 1, 1904.....Ann Arbor, Mich.
Paulson, A. J. (R); Jefferson Med. Col., 1904; July 1, 1904........Minneapolis
Pleth, Valdemar (R); P. and S., Chicago, 1899; July 1, 1904......Chicago, Ill.
Preisinger, J. W. (R); Uni. of Minn., 1904; July 1, 1904..........New Ulm

Ribble, G. B. (R); Uni. of Minn., 1904; July 1, 1904..............St. Paul
Richarls, W. G. (R); Uni. of Minn., 1904; July 1, 1904.......Minneapolis
Robbins, R. P. (R); Uni. of Minn., 1904; July 1, 1904...........Sauk Center
Rosen, Samuel (R); Uni. of Minn., 1904; July 1, 1904........Minneapolis

Schelde, E. M. (R); Hamline, 1904; July 1, 1904...............Minneapolis
Schulze, A. G. (R); Uni. of Minn., 1904; July 1, 1904..............St. Paul
Sivertsen, Ivar (R): Hamline, 1904; July 1, 1904........ ......St. Paul
Skinner, H. O. (H); Hahnemann, Chicago, 1904; July 1, 1904........St. Paul
Steven, George (R); Rush, 1903; July 1, 1904....................Rochester
Stevenson, G. A. (R); Hamline, 1904; July 1, 1904..............Minneapolis

Tebbitt, R. L. (R); Uni. of Minn., 1904; July 1, 1904..........Minneapolis
Thomas, G. E. (R); Uni. of Minn., 1904; July 1, 1904...............St. Paul
Thomson, A. M. (R); Uni. of Minn., 1904; July 1, 1904..........Minneapolis
Titus, W. S. (R); Uni. of Minn., 1904; July 1, 1904..................Mora

Wallace, C. J. (R); Uni. of Minn., 1904; July 1, 1904..........Minneapolis
Webster, A. M. (R); Uni. of Minn., 1904; July 1, 1904........Minneapolis
Wheeler, F. L. (R); Uni. of Minn., 1904; July 1, 1904..........Minneapolis
Wilkowske, C. W. (H); Uni. of Minn., 1904; July 1, 1904.......Arlington
Williams, S. E. (R); Uni. of Minn., 1904; July 1, 1904..........Minneapolis
Willson, H. S. (R); Uni. of Minn., 1904; July 1, 1904............Minneapolis

NORTHWESTERN LANCET
A Semimonthly Medical Journal
VOL. XXIV AUGUST 1, 1904 No. 15

A STUDY OF ELECTRICAL INJURIES*

By H. L. Staples, A. M., M. D.,
Professor of Clinical Medicine, University of Minnesota
MINNEAPOLIS

Within the past twenty years electricity has been widely utilized as an illuminating agent, also as a motive power in the propulsion of cars and machinery. This employment is increasing with marvelous rapidity, and the future applications are well-nigh infinite. Electric cables of high potential are thickly spread through our cities, and injuries are becoming much more frequent, and though usually limited to linemen and electrical power-house employees, yet they constitute a menace to every citizen. Little has been written on the subject of these accidents, although real or supposed injuries are now common, and alleged remote effects are made a basis for litigation. For the past fifteen years I have treated practically all the injured employees of the Minneapolis General Electric Company, and many in the service of other corporations, besides a number of persons who came into contact with their wires.

A brief description of electrical nomenclature and currents may not be misplaced.

The *volt* represents the unit of electromotive force or potential, and is the force that is generated by an ordinary zinc and copper Daniell cell.

The volume or measure is represented by the *ampere*. As with a river, we may have a large volume with a slight fall; or as with a mountain stream, we may have a small volume with an intense velocity. The street railway has an ordinary voltage of five or six hundred with an enormous amperage.

The resistance is calculated in *ohms*, and is an important factor in all electrical computations. In case the epidermis is dry, this is a very great and powerful protection against electrical harm. It is variously estimated from ten to forty thousand ohms. If the skin is well moistened, the resistance is lowered to 1500 or even 500 ohms.

The street arc light in this city is usually made by a direct current having a voltage of 50 to the lamp. The lamps are usually hung in circuits of 50, so that the extreme voltage would be 50 times 50, or 2500 volts. You will readily observe that there is a great variation in the current which a lineman or bystander may receive.

An alternating current changes its direction about sixty times a second. This forms the primary cable of about 2300 to 2500 volts. Passing through a transformer, it is delivered by the secondary wire to stores and residences in the form of the Edison lamp of about 110 volts. This strength, except for slight burns, is absolutely harmless; but the metal socket should not be grasped in severe storms for fear of crossed wires.

Electrical injuries are of three varieties:

1. Burns of greater or less severity.
2. Almost instant death.
3. Psychical or functional disorders.

The location of burns is most frequently on the hands, next the wrists, forearms, feet, and legs. Through falls many sustain burns on various parts of the body. The burns vary greatly in intensity, being always more severe than apparent on first examination. The slight blister may develop sloughing to the bone. Often the tissues are charred, and the tendons, muscles, nerves, and blood vessels destroyed, even involving the bony structures in some instances.

---

*Read before the Minnesota State Medical Association, June 1-3, 1904.

The burning of the clothing may disseminate the injury.

The character of the burns is at first dry, aseptic, and indolent; later oozing and symptoms of moist gangrene may appear. The pain is often severe. These burns should be washed with peroxide or some other weak antiseptic, dressed with protective rubber-tissue strips, and well covered with cotton. Lard or vaseline ointments are not to be used at first. Skin grafting, or even amputation, may be necessary. Blisters must be opened immediately, otherwise the rapid accumulation of serum under the epidermis gives great pain. A direct current burns more severely, especially at the positive pole, while extensive burns increase the resistance and are probably a protection.

Flash burns, or injuries to the eyes by exposure to the intense light, are not uncommon, and seen in motor-men or those employed about dynamos. The symptoms are pain, photophobia, conjunctival hyperemia, and profuse lachrymation. One severe case is reported with sloughing of the epithelial covering of the cornea. Complete recovery resulted. Subsequent examination showed normal optic discs and retinal vessels. In no case have I seen permanent injury, and this is the report of all physicians who see many of these accidents. The treatment should include cocaine, boric acid, and smoked glasses. Conditions must be extremely favorable for a voltage of less than 1000 to cause death. Persons receiving a voltage of 1000 or over may be almost instantly killed, yet perfect recovery may ensue after a contact of over 40,000 volts. The completeness and length of contact, the resistance of the body, and the strength and direction of the current are all factors. Currents through the thorax, or from head to thorax, are most dangerous.

Some are killed outright in shocks of enormous potential, or in case of lightning by immediate and complete arrest of the heart. For such cases there is no treatment. Others are left in a state of suspended vitality with heart and respiration almost arrested. From this condition they may recover, with or without artificial respiration. Sometimes a cry is heard, best described as a rapid drawing in of the breath, followed by a half cry or shriek, but nothing intelligible. The first writers on the subject stated that death was due to tetanic rigidity producing asphyxiation, rather than by direct action on the heart. Later investigators claim that death is usually caused by a fibrillary contraction of the heart muscle, and consequent anemia. Dr. Bailey of New York kindly writes me:

"As far as my knowledge goes, death by electricity is due to paralysis of the intrinsic nerves of the heart. I doubt if these changes would be sufficient to permit their recognition as such after death. The nervous system shows generally no post mortem evidence which is pathognomonic."

Dr. Irvine, prison physician at Sing Sing, gives the following interesting statements in regard to electrocutions:

"First, Unconsciousness is undoubtedly instantaneous.

"Second, There are no uniform post-mortem changes which would show electrical death beyond all question of doubt when the actual cause is not known to the physician.

"Third, The cause of death, in my opinion, is due to a combination of causes, principal of which is inhibition of nerve centers, and trauma as shown in the condition of the brain, etc., in many cases.

"Fourth, Invariably 1,716 to 1,800 volts are employed. I have seen executions expeditiously performed by a little less than 1,500.

"Fifth, The contact is full voltage about ten or fifteen seconds, gradually reduced to about 800 volts, and then pushed up to about 1,760 a second time and finally shut off, this all being done in the course of a minute.

"As a rule, we give them a second shock of eight or ten seconds full voltage, and there have been two or three cases where we have been obliged to give even five shocks before the heart ceased to beat, but in no case was there any evidence of life after the first contact, except in cardiac action."

I have recently made a very careful necropsy in a case of accidental electrocution without finding any evidence of death whatever. This man could have been revived by prompt action, I am quite sure, as the contact was imperfect and momentary. In judicial electrocutions prompt necropsies are made. It is thought occasionally a culprit leaves the electric chair in a state of suspended vitality merely, and could be revived by suitable measures.

Currents of great intensity may kill instantly by producing a heat coagulation of the cellular constituents, a direct cellular disorganization.

TREATMENT OF APPARENT DEATH WHETHER FROM ASPHYXIA OR CARDIAC PARALYSIS

Cut off the current with care, using rubber gloves, cloths, or a stick to elevate the wire, or place a board under the victim and raise the shoulders permitting the head to hang down. Don't touch the man's hands until the current is broken. Allow plenty of air and, if possible, remove the body to a house and surround it with hot water bottles. Strychnine, 1-30 grain, hypodermically, is the best respiratory and heart stimulant. Artificial respiration must be maintained for a long time. The tongue should be seized with a handkerchief, and rhythmical traction established, thus stimulating the motor nerves and muscles of respiration. Massage may be applied to the chest over the heart. Continual efforts should be maintained for hours.

A railway porter was rendered insensible by a current of 5,000 volts, and was apparently dead for forty-five minutes, but was revived by artificial respiration and traction of the tongue. A man received 2,000 volts from hand to hand. He was not badly burned, but the heart stopped pulsating, and the breath did not cloud the mirror. After forty minutes of artificial respiration he fully recovered. Another received 200 volts from hand to hand. He fully recovered in twenty-five minutes, one hand being badly burned. A man received 2,000 volts of the alternating current through his body. He became unconscious and in a state of collapse. The physicians worked over him for seven hours before complete recovery. He never had an ache or pain, or the slightest mental disturbance afterwards.

The sensations of a severe shock is described by Broca as follows: While experimenting with a Rhumkorff coil he received a powerful current. He was thrown to the ground, could not articulate, and felt as though his heart had ceased to beat. Sensation was lost in his arms and legs. The arms were paralyzed and could not be moved. The fingers were hyperesthetic. He was able to walk home, and after two days was perfectly well. Perfect consciousness was retained, and he said to himself that he was dying.

Crile has reported an unsuccessful attempt to revive a lineman four hours after the shock by direct heart massage, the pneumatic rubber suit, and the intravenous injection of a 1-25,000 adrenalin salt solution. He wisely states that we cannot expect to restore the apparently dead by resuscitation of the heart alone, but respiration must be established, and the vasomotor centres stimulated into renewed activity.

Sudden death is sometimes attributed to electricity when such is not the cause. We must remember that mental emotion, especially fright, may cause death directly through the effect on the nervous system. Many such authenticated cases occurred during the reign of terror at the time of the French Revolution. Myocarditis is a more frequent cause of sudden death than supposed. Eichhorst states that this may cause death without any change in the myocardium being observed either macroscopically or microscopically.

A man died while cleaning out an old stationary boiler in this city. For illumination he carried in his hand a portable Edison bulb. Careful examination showed the maximum voltage to be 110. The cause of death was given as electric shock. He had had a weak heart for years, and undoubtedly died of myocarditis. The slight charring of the hand by the brass socket was merely incidental.

PSYCHICAL OR FUNCTIONAL DISORDERS FOLLOWING A REAL OR IMAGINARY ELECTRIC SHOCK

There is something mysterious about electricity, and it has a curious effect on certain susceptible individuals. Quacks for scores of years have sung the praises of this wonderfull all-healing fluid, while electric belts are as much in evidence as Perkins' tractors were one hundred years ago. A sublime illustration of human credulity and medical Christian Science is an old maid perched on an insulated stool absorbing static sparks for a series of chronic complaints, running the gamut from blasted affections to blind piles.

I have attended over two hundred cases of electrical injuries in employees, not one of whom developed one sign or symptom of nervous disorder; and such has been the result in many non-employees where I have attended them from the first. In cases attended by others, about one-third have manifested nervous symptoms of greater or less severity. Where they fall into the hands of a good, kind, sympathetic doctor who is uninformed in regard to such injuries, it takes great strength of character on the part of the patient to avoid hysterical symptoms. Organic results of various injuries occur immediately or soon after an accident. They may become fatal, or partial or complete recovery may ensue. Chronic nervous diseases may later appear, and render it difficult to determine whether they are the result of accident or not. It is different with electric shocks; the injured one dies immediately, or entirely recovers.

Bailey states that it is not probable that electric currents which do not produce almost instant death, ever cause organic disease, yet they are very prone to induce functional nervous disorders from fright. Dana reports the case of a patient who had read of the killing of a man by an electric wire. A few days later he was struck by a dead wire. The blow was slight, but he fell unconscious, and later exhibited marked hysterical symptoms.

Traumatic hysteria is essentially a mental disorder, a delusional insanity. Pathological anatomy finds no place in its protean manifestations, yet it exhibits itself as a severe bodily infirmity. The patient is positive of his own incapacity, and this belief often continues for a long period. He becomes a barnacle on society, and an octopus on corporations when they are involved. Bad heredity is an important factor in the etiology and prognosis; an unstable nervous system is a birthright. A corporation is held responsible because a litigant's ancestors were syphilitic, epileptic, alcoholic, tubercular, or crazy.

A Hebrew dry goods clerk touched an electric wire with his umbrella. There was no burn, but he complained of pain in his arm, and the examination caused expressions of great suffering. The hand was mottled and cold, and the arm flexed at the elbow. He was etherized by his physician, and pronounced a fraud. This greatly ameliorated his symptoms. A five-hundred-dollar verdict promptly cured him.

Some years ago a teamster had a horse fall in the street while passing an opera-house whose iron pillars had the reputation of being electrically charged. While raising the animal he imagined he felt a shock. The physician summoned confirmed his fears. His arm became stiffened, anesthetic, and paralyzed. Motion gave considerable pain. Several months later suit was brought for several thousand dollars. On examination I found that the anesthesia followed no anatomical lines, that the arm was normal in size, reflexes normal, and on electrical stimulation the arm was freely movable. Prominent electricians swore that the wiring of the house was in perfect condition, and by no means could the current be carried in the middle of the street even if the insulation was faulty. Local physicians declared that the man's arm was dead, and that settled it with the farmer jury. He was awarded a large sum, the corporation rendered insolvent, and the stockholders defrauded. I learned that the family history was defective in this case. He has not yet fully recovered, but has been observed to use his arm occasionally.

Charcot taught that hysteria never appears except in those who are degenerate by heredity or acquirement. This probably is true, but often difficult to demonstrate. There exists some defect in the domain of higher consciousness. The man sees, feels, smells, tastes, or hears, without knowing it, frequently losing the power of voluntary motion. False beliefs control the life of the person. This condition occurs after a slight accident in which there is an element of fright, and very often there is no physical injury whatever.

I present these typical cases of real injuries: P——, received 5,000 volts of a direct current through his hand, entering on the back where you will observe the sloughing was very extensive. There is no paralysis or other injury except from the burn itself.

Another case, Mr. W——, was adjusting some wires on a pole when he received the full voltage, about 2,500, through his hands. He was rendered instantly unconscious, and actually fried on the cable for fifteen minutes. He revived in about half an hour, and made a perfect recovery, except for the burn scars. Not the slightest evidence of nervous involvement exists.

The effect of confidence, encouragement, suggestion, and isolation, is extremely powerful, and is the only method to promote speedy recovery. Reverse this current, and you plant stigmata which may be well nigh impossible to eradicate.

The older the person the greater the danger of chronicity. Curiously, it is more lasting in men than in women. Alcoholism and arteriosclerosis render it more intractable.

It is absolutely impossible for a patient to get well while litigation is progressing. He thinks he must get worse, and he almost invariably does. The case adjusted, he commences little by little to execute motions and exercise special senses which heretofore he was incapable of. Relatives and friends observing these acts, commence to regard him as a fakir, and forcible means are instituted to cause a revival of energies. A few swift kicks administered by an irate wife caused a marvelous resurrection in a paralytic case which I had under observation.

Eichhorst naively remarks that traumatic neuroses very rarely occur in countries where the injured person is not entitled to damages. Out of 14,000 accidents among the employees on an Eastern railway system eight developed hysteria, no litigation being involved, while 20 per cent of the injured passengers were thus affected. Take an illustrative case. A man of neurotic ancestry imagines or actually received a slight shock and burn, accompanied by a slight fall. He is badly frightened, and goes to bed exhausted. The good, kind physician aforesaid appears, and is impressed with the seriousness of the condition, and paralysis is feared. The patient is kept in bed, and all the neighbors are allowed to relate tales of woe. In the next hour or half hour, if the run is short, the genial, generous legal advisor appears. He is fully convinced in a few moments that the injury is permanent, and will throw his whole soul into the work of obtaining a partial recompense for the disability. Incidentally he pockets two-thirds of the blackmail, if a settlement is obtained. A sympathetic friend suggests that the symptoms are identical with those of an apoplectic who has just died. Later on a fourth party is sometimes added, that profound personage whom we will denominate the "neurologist" for the plaintiff. His last case in the country was so notoriously bad that losing his contingent fee he was obliged to walk home, hence this case is of unusual interest to him. He finds hyperesthesia in one place and anesthesia in several places, also loss of power, gravely stating within the oxyokoia, or sharp hearing, of the patient that he has unmistakable symptoms of that mythical, non-existing malady, Erichsen's spinal concussion. Unless settlement is prompt, this patient will be a curse to himself and everybody adjacent for months or even years.

On the other hand, physicians should say to patients suffering with nervous shock, electrical, railway, or otherwise, that they will positively recover; and he should not resort to drugs and electricity to cure a disease which does not exist. It is a mental state, and not a disease with organic lesions, a transient condition which, under proper advice, will soon fully disappear. Sympathy or money is the thing eagerly sought; these factors should be eliminated, if possible.

There may be a condition so susceptible and abnormal that the neurosis will continue in spite of the best environment and medical care, but this is exceedingly rare.

The electrical companies exercise great care in protecting the public from injury. Fires, rain storms, faulty insulations by rubbing, cyclones, or severe seismic disturbances may temporarily disorganize their systems, and render them dangerous. They are always willing to adjudicate real injuries where a possible liability exists.

Slight shocks, burns, and bruises on dead wires, produce a series of symptoms in susceptible cases where the medical attendant, attorney, and sympathizing friends are responsible for their development and continuance. These should be the defendants in case of litigation. Inform the patient that he is not harmed in the least, except an evident burn or bruise, and he will promptly recover. Prolong litigation two or three years, and the man is very likely ruined. If he recovers a remuneration, it frequently does not compensate him for the time lost, while if nothing is obtained after years of waiting, thinking, aching, examining, drugging, dyspepsia, and constipation, he is often damned beyond full recovery. It is usually in the power of the intelligent physician to prevent the development of this condition.

THE ART AND SCIENCE OF MEDICINE*

By Charles Lyman Greene, M. D.

ST. PAUL

However old its art, the *science* of medicine belongs to the 19th and 20th centuries, and its advance in the past one hundred years has been greater than during the whole period from the birth of Æsculapius to the death of Jenner. Empiricism has yielded to reasoning and deduction, fact born of scientific experiment has displaced and supplanted theory, and the snap diagnostician has met his death at the hands of the modern pathologist.

The modern physician has lost none of his humanitarian spirit, and with the wiping out of distinctions of school has come a broader and more receptive mentality that augurs well for the future.

One of the greatest advances within the profession itself is the tendency to the closer union of the physicians themselves. For years the medical society, county, state, or national, has represented only a spirit of good fellowship and a desire to give and receive the mutual stores of learning and experience. The societies have been loosely organized and poorly attended; they have lacked cohesion and authority, and in consequence have accomplished far less than they should for the individual physician, for the profession, and for the public. The re-organization of the American Medical Association has changed all this in a wonderfully short time. Now the county medical society finds itself an active vital part of a great and powerful organism; in a single year the state association finds its active membership doubled by the accession of accredited numbers, and as if bathed in the magic fount its old and infirm body takes on at once the vigor and promise of a lusty youth. The value of such an association lies in its ability to promote (a) measures of public health; (b) higher medical education; (c) the highest possible ethical standard; (d) the maintenance of correct relations between the profession and the laity it serves.

PUBLIC HEALTH

Most unbearable of all the burdens that a physician carries is the knowledge that all infectious diseases are unnecessary. He sees the yearly record of thousands and hundreds of thousands of deaths from diphtheria, tuberculosis, and typhoid fever, and wonders that people are so easily moved by the horrors of war and so apathetic in the face of this slaughter of the innocents in time of peace. He cannot understand why, in the face of proven facts, the mothers and fathers of the land sit calmly by—commit constructive murder in fact—when they should rise on every hand to protect their children from disease and death. It seems to him that *every* press and pulpit in the land should preach the doctrine of health, and that *every* judge should be interested in the strict enforcement of laws made to lengthen life, abolish unnecessary suffering, and preserve the happiness of the home.

At present every physician must be a missionary and expect to receive, oftentimes, the treatment accorded his fellow of theology at the hands of barbarous and unenlightened peoples. This will not long endure; our national body must work for and will secure a national board of health, must spread the *gospel* of health abroad in the land, and seek in every way to secure laws that will remove the curse of infectious disease.

All these things physicians can and will do, and we may hope to live to see the day when all men will recognize the fact that nearly every death by contagion represents an antecedent criminal act.

MEDICAL EDUCATION

The advance made in medical education in the past thirty years is something to be proud of, and in this, the State of Minnesota has played a great and worthy part. Within our limits a great state medical school has developed whose policy is in line with the ideas of the most advanced educators of the country. The action recently taken in connection with the admission requirements in the department of medicine of our State University is as creditable as it is unusual, and plainly shows the breadth of mind and the high purpose that actuates its Board of Regents and its President.

There are but three medical schools in the

---

*President's address, delivered before the Minnesota State Medical Association, June 2, 1904.

United States whose requirements equal that of the University of Minnesota, and all about her are rivals who encourage a large registration by adherence to the older standards, and pour out annually their flood of new-fledged physicians to swell the over-crowded profession.

What this state and this country want is fewer physicians, but better trained men. Minnesota now requires one year of academic work, and offers any of her graduates who shall have completed two years of selected academic work and four years in medicine the double degree B. S. and M. D. from the full faculty, a concession which well illustrates the changed attitude of the purely academic man towards the once despised "medic."

Within a short time *all* entrants will be required to have credits for two years of academic work leading to medicine, and all such who graduate will receive the double degree. The present high standard was adopted with the full knowledge of the fact that it means cutting down the classes by fifty per cent.

This is a step which should receive recognition and commendation at the hands of this Association. Furthermore, this body should urge the American Medical Association to insist that the American Medical College Association advance its requirements all along the line. The profession is being continually disgraced by the half-educated men turned out by proprietary schools; and while much has been done to better conditions, the action taken has been halting and insufficient. It should be made impossible for a purely proprietary, low-grade school to exist in any state in the Union.

Our state medical laws should be amended along the lines suggested by the Legislative Committee of this society at the last session, and every effort should be made to carry out the high purpose of the original framers of legislation which marked Minnesota as a pioneer in advance medical education.

EDUCATION OF THE PUBLIC

One of the most difficult tasks that our Association faces is that of instructing the public in an effective way, yet such work is indispensable to really effective legislation for their protection. When our antivaccinationists besieged the legislature last year, it seemed for a time as if the plain lessons of the past might be forgotten; both pictorially and typographically certain papers sought to show the greediness of the physicians who sought to deprive free American citizens of their right to become masses of putridity, and infect their friends and neighbors with a disease as unnecessary as the plague and as great a disgrace to any community harboring it. Even the innocent, mild-eyed calf was credited with appalling possibilities in the transmission of vile diseases.

I am of the opinion that people are a trifle over-protected by their physicians; they have grown to rely upon the medical man as one who will cut his own throat in a financial sense to protect them and theirs, work single-handed against ignorance, greed, or fraud, and accept with philosophy the insulting innuendoes or direct assertions impunging his motives. Perhaps it might be better for all concerned if we were content to assume a neutral attitude and let our exchequers swell, but we have acquired the habit of putting aside self-interest, and it is unlikely that we shall change, but by all means let us confine ourselves to the prevention of preventable disease. Let us leave patent medicines and similar side issues to meet their inevitable downfall through other agencies. The handwriting is on the wall for their reading, and we may trust the organization now dealing with this question. It will accomplish more in five years than we could in a century. But some way should be found to keep communities advised as to what the science of medicine is and does. Every county society might have certain of its meetings open to the public, and might arrange a special program and discuss topics of public value. These should be conducted with great care, and be devoted wholly to the questions of medical progress and the prevention of disease. Topics should be so assigned and so handled as to do away with any question of self-laudation or advertisement.

I participated in a meeting of this kind attended by an exceptionally clever audience, some months ago, and believe that a great amount of good resulted from a most interesting and delightful evening. Something of this sort must be done before our work can reach anything like its proper measure of usefulness.

SCHOOLS OF MEDICINE

From the medical school to schools of medicine is a long step, for the former has proven the destruction of the latter. One may say with confidence that in the light of scientific medicine no distinction of school can exist. With the broadening of our knowledge has come so great a spirit of tolerance that we are prepared to say to any man: "Educate yourself in those matters concerning which we have positive knowledge, and we shall not quarrel with your therapeutics."

THE CODE OF ETHICS

Since the last meeting of the American Medical Association all of our members have had an opportunity to read the revised code of ethics recommended. The changes made in the old code have nearly all represented a distinct advance, and place us in a better and more fitting attitude toward the public. There was something manifestly absurd in some of the old paragraphs relating to the duties of the patient to the physician, and these have been stricken out. Such matters of discussion as would naturally fall under this head may well be considered in connection with our next topic, viz.,

THE RECIPROCAL RELATIONS OF THE PHYSICIAN AND THE PUBLIC

The change in attitude and character of the physician necessarily resulting from the enormous scientific advance of the past century must sooner or later find its true reflection in the public that he serves; and the national association will no doubt do its part in educating the public and thus bring them to a better understanding of the status and functions of the physician.

Civilization is as yet but skin deep, a mere film of refinement and intelligence laid all too lightly upon a foundation structure of primitive ignorance and superstition. The demonological origin of disease, and the value of amulets, charms, and magic rites, find their modern prototype in such cults as Christian Science, of which it has been aptly said that it is neither Christian nor scientific; and the thinness of our civilization veneer is proven by the primitive credulity of otherwise educated and intelligent people. In the middle ages the head of a family would brave more than the terrors of death in order to obtain the mandragora growing at the gallow's foot and possessed of healing virtues and protective powers so great as to make it a sort of tutelary deity. The belief was universal that no human ear could withstand the shriek of the uprooted plant when gathered at midnight in the full of the moon. Our own visionaries are not far removed from the simpler folk, and would be as well employed in buying mandrake or mullen, or striving to possess the magic wand as in seeking to practice and promulgate a flimsy doctrine whose one sole germ of truth has been public property since the dawn of creation.

Yet we must not expect too much of the people; our great-great-grandfather may have burned innocent men and women for too intimate an acquaintance with a personal devil, or perchance may himself have suffered for night riding on the flying broomstick. There are times when we feel that, as Lowell said of a certain outbreak of infectious lunacy, every brain must have its private maggot, and it sometimes seems that mental dyspepsia outweighs in importance its physical namesake. But truth is mighty and will prevail. Medicine is stronger and better each year because of its steady search for truth to add to truth, and because of the altruism of its basic principles. Failure to comprehend and appreciate the fundamental barbarism of our modern structure makes it difficult for the physician to understand the attitude of a portion of the people towards him and his work. He points to the unselfish labor, the self-sacrificing devotion of seekers after medical truth; he glories in the altruism of a body of men whose first thought is to *prevent* disease, men who seek to find and point out the way of health to those who are often too blind to follow it. How long, he asks, must the physician preach the doctrine and the law of health to unheeding ears? When will the mothers and fathers of the land unite to banish the destroyers of their children? Why are the ignorant and unskilled, the charlatans and faddists, able to command support and obstruct the making and administration of beneficent laws? He finds no answer, yet he may be of good cheer; the day is near at hand when the passage of good sanitary laws, and their enforcement with rigid hand, will put an end to the needless epidemics of typhoid, diphtheria, scarlet fever, and its fellows, as it has already well nigh banished smallpox from well vaccinated countries.

The day will come when no public officials shall dare to give their people diluted sewage for drink, and when every judge will fine or imprison the man or woman who carries death from house to house. A hundred years from now tuberculosis will be as rare as leprosy, and such innocent children and brilliant men and women as now die miserably and prematurely shall live in health. The bonds uniting our profession to the people will be knit close and even closer, if we keep our own house in order, and strive in the future as in the past to keep medicine a profession and not make of it a trade. Pursued in the spirit of philanthropy and scientific endeavor, its repulsive features serve but to bring out in clearer and higher relief its ennobling virtues. Trade is honorable, but the medical tradesman is degraded indeed. The scavenger's is a better and cleaner office than that of the physician who forgets the fundamental precepts of his guild. He who patents means of cure, or the commercialist who buys and sells his patients, is a living source of danger to the profession.

To the practical, cool-headed, scientific attitude of the seeker after truth must be added the higher ideals that have drawn to our body in the past the best of the brain and heart of an intelligent people. Not only must we seek to make better doctors by abolishing the low-grade schools, and raising the standard of graduation throughout the land, but we should help and encourage the fit amongst our youth to adopt our profession, and discourage the unfit. We must encourage and support our medical societies to the end that one great body shall move obedient to the will of its democracy, preach the truths of medical science, uphold its rights, and enforce its beneficient laws. As before stated, we look to the American Medical Association to improve the public health, to disseminate knowledge, to promote fraternity, and to punish the skulker and grafter. The power for good that can be exercised by this body is beyond expression, and it becomes the duty of every physician in good standing to enroll himself in its ranks.

PURITY OF PROFESSIONAL MOTIVES AND CONDUCT

We may thank God that the curse of sectarianism is removed from medicine, that there is no longer a "school," new or old, and that no sectarian body can long exist in the fierce light of modern medicine. Such belonged to the time and dark realm of the theory; we live in the full sunlight of proven truth. Division into warring schools checked advance, and prevented progress.

It is good to know that any man who is earnest, honorable, and properly educated becomes our confrere, and that the "pathies" have fallen flat from very lack of opposition. The modern physician seeks truth to add to accumulated truths. The faddist with his one idea, his inflated pretensions, his perilous narrowness, presents perhaps his one grain of gold in his mass of baser metal. This one elementary grain of truth the physician stands ready to take, develop, and use; and its dogmatic possessor is despoiled for the public good. In the old days of almost pure theory the faddist had his opportunity. In our day he is an anachronism. The symptoms of disease, sound anatomy, and pathology leave little ground for strife as to methods of treatment. We should welcome truth even though buried deep in the mould of error, but we should set our faces and our hands against ignorance, dishonesty, and quackery, in or out of our profession. Above everything we should condemn and punish the commercialist in medicine, and cherish and maintain the humanitarian ideals which have ennobled and dignified our past, and will ensure for all time a place for medicine second to no other calling.

DR. FRANKLIN STAPLES

A few months ago there passed from this world to a better, from daily suffering to perfect peace, a man who in himself exemplified all that is best in our profession.

Dr. Franklin Staples was loved by all who knew him. In his public relation he worked without thought of self for the good of his kind. His interest in this society did not cease when he retired from the presidency he so worthily filled, in 1871, for even when he was too ill to attend our meetings he added his valuable contributions to our programs.

His interest in medical education is only partially shown by the fact that he once filled the chair of medicine of the State University and was one of those foremost in the movement for a higher standard as prerequisite to state licensure.

Up to the day of his death he worthily held the presidency of our State Board of Health, and up to the very last days of his life neither pain nor fatigue prevented him from filling the office in fact, and not merely in name.

Though his body was crippled by incurable and advancing disease, his mind never lost its hold upon things medical. Article after article of interest and value came to us from the hands of this courageous man, who faced the inevitable with a Spartan courage and fortitude tempered by a natural sweetness and humanity that suffering seemed only to strengthen.

On one of the too rare occasions when I visited him at his home, he was surrounded by visitors, his "boys and girls" as he put it. Mothers and fathers themselves then, but brought into the world under his ministrations. They and their mothers loved and respected this kindly, fearless, uncomplaining, pain-racked man, and the latter days of his useful life were filled with the knowledge that their gratitude, sympathy, and love encompassed him.

By his death we have lost a loved and respected confrere, but in his life and its rewards we find encouragement for the possessors of kindly hearts and doers of good deeds.

If the measure of human responsibility be the use made of God's gifts to the individual man, our departed friend fulfilled to the utmost his obligation, and the world is the better for his work and example.

Let us all work for the catholicity of our profession, and oppose dogma only by the presentation of irrefutable truth. Whenever the commercialist threatens let us think of the unfitness of his doctrine for our true physician who sees the birth of a new life in pain and suffering, who sees the full and rounded life slip gently back to the arms of its Creator, who must be confidant and comforter, who soils his hands with unnameable filth, and jeopardizes his own life that others may escape peril and suffering.

Fear not that in the end a reward will be lacking. A medical profession true to its old ideals will be to the great public as the loved country physician to his flock, honored, and respected; guide, counsellor, and friend.

SOME IDEAS REGARDING THE NATURE OF SYPHILIS*

By Franklin R. Wright, M. D.

Clinical Instructor in Dermatology and Genito-Urinary Diseases, University of Minnesota

MINNEAPOLIS

Syphilis is an organic, infectious disease which affects the entire organism. It begins at the point of infection by lesion peculiar to itself, and passes, after a definite period of incubation, to general symptoms, that show themselves in the beginning, principally as eruptions on the skin and mucous membrane, and may continue later as morbid changes in the different organs.

The cause or virus of syphilis is still unknown. Much time and study have been given to the subject by scientific men all over the world to ascertain the true cause of this disease, but thus far their investigations have been without reliable results. Careful and laborious investigators have announced from time to time that they have discovered the real cause of syphilis only to have their work entirely disproved by other investigators in the same line of research. Other scientific men have announced the discovery of certain changes in the blood characteristic of syphilis and of diagnostic value, only to have other observers point out the error of their investigations. Research along this line may differ only by lack of culture media.

The lower animals are immune from this disease. At the present time the living human being offers the only known material on which this virus, whatever it may be, will grow.

Syphilis is transmitted either by inheritance or infection. In order that infection may take place it is necessary that fresh infectious material, that is to say, the secretion from a primary lesion, moist lesion, or blood of a syphilitic person be brought into direct contact with a wound or, at least, a break in the epithelium on the body of a person free from syphilis. This transmission of infectious material may be brought directly about by a lesion on the body of a syphilitic person, or indirectly by contact with some object which has become contaminated by contact with such lesion. Though indirect transmission does occur, there can be no question but that the possibility of such infection is very small. The effectiveness of the virus of syphilis appears to be very short-lived, and very sensitive to variations of temperature; hence if indirect infection is to take place the transmission must be almost immediate; that is, before the contaminated article has time to dry or become cold. For example, it would be very dangerous for a non-syphilitic person to smoke the pipe of a syphilitic person, if the same was taken fresh from the latter's mouth; but if the pipe were to be laid aside until it had become cold before its use by the non-syphilitic person, there would be little if any danger in his using it. Even the dead bodies of syphilitic persons lose their infectiousness when they wholly lose the body heat. I am aware that post-mortem infections have occurred, but only when the post-mortems were conducted within a few hours after death, before the body had become entirely cold, and while it still retained some vestige of animal heat.

---

*Read before the Minnesota State Medical Association, June 1-3, 1904.

The first period of incubation, or the time from infection until the appearance of the initial lesion, is one of quiescence, as far as external signs are concerned. This is not true, however, of the second period of incubation. The time between the appearance of the initial lesion and the appearance of the constitutional symptoms is marked by active changes in the lymphatic system, which, occurring as they do in regular order, indicate accurately the change of the infection, and are as absolutely diagnostic as the constitutional symptoms.

The initial lesion appears at the beginning of the third week. A week later, or at the beginning of the fourth week, the lymphatic glands in one groin begin to enlarge. This enlargement reaches its height one week later, or at the end of the fourth week, so that a case presenting a sore and enlarged gland on one groin is four weeks old. During the fifth week the glands on the opposite side enlarge, so if the case presents enlarged glands on both sides it has reached the end of the fifth week, or is five weeks old. Toward the end of the sixth week, or at the beginning of the seventh week, the epitrochlear and cervical glands are to be felt. The constitutional symptoms appear with the eighth week in the shape of an eruption on the skin, which may be macular, papular, or pustular, but is never vesicular in character. This eruption is distributed evenly over the sides, on the chest and abdomen, and on the extremities, showing predilection for the flexor surfaces. This eruption appears very rapidly, often coming out in a single night, certainly within a very few days. It is not transitory in character, that is, it does not appear today and disappear tomorrow; neither is it permanent. If left to itself without treatment this primary eruption, which appears at the eighth week, will begin to fade out about the eleventh or twelfth week, and will disappear about the fourteenth week only to reappear about the twentieth week. The eruption of this relapse occurs on the same parts of the body as the primary eruption, but differs from it in that the individual lesions are larger, and manifest a tendency to occur in groups. This tendency to grouping becomes more marked with each relapse.

The mucous patch, the characteristic lesion of the mucous membrane, and the papule which develops about the genitals, particularly in women, are not a part of the primary eruption, but belong to relapse conditions. The mucous patch is usually the first, and often the only, indication that a relapse has occurred.

Alopecia specifica is another symptom belonging to the late secondary period. It may be so severe as to cause a loss of all the hair on the body. I have seen three such cases; however, its manifestation is usually limited to a thinning of the hair in the temporal and occipital regions. This condition begins about the fifth to the eighth month, and is somewhat slow of development, so that a well marked case is at least of eight or nine months' duration. The return of the hair is slow, but ordinarily is complete at the fifteenth to eighteenth month.

Syphilis relapses in periods of about three months. The cause of these alternate periods of latency and activity is unsettled. Vichow believed that the organism is able to throw off the virus and rid itself of the disease, but that the lymphatic glands retain hidden foci which become active again as soon as the system at large has freed itself of the virus. Other observers believe that the cause of the alternate and latent active periods is that the life cycle of the virus is similar to that of the plasmodium malariæ. My own belief is that by growth of virus in the system a certain toxin or antitoxin is produced which checks or inhibits the growth of the virus, and brings about the latent period. During this latent period toxin or antitoxin is slowly eliminated. When the elimination has reached a certain point the virus becomes again active. With each relapse a small portion of toxin or antitoxin becomes permanent in the body. When this gradual accumulation becomes sufficient relapses fail to occur, and we say the disease has run its course.

THE HOSPITAL BULLETIN

ST. BARNABAS HOSPITAL

MINNEAPOLIS

A CASE OF TRAUMATIC APPENDICITIS, ASSOCIATED WITH OVARIAN CYST

In the Service of Dr. G. G. Eitel

Miss A——, aged 23, in occupation a school teacher in a small town, entered the hospital July 10, 1904. She complained of a tumor in her abdomen. Her family history is unimportant.

Past History.—She has had no serious illness, but for years she has suffered from severe dysmenorrhea, which has grown progressively worse. For the past year her menses have been irregular, occurring usually at intervals of from two to three weeks.

Present Illness.—On May 27th the patient was thrown from a horse. She was bruised, but suffered no apparent injury. Two days later, while driving, the horse again ran and turned over the carriage. She was thrown several feet, but she was able to get up and walk a short distance. The following morning she suffered intense pain in the right iliac region, which penetrated to the back. At this time also she was absolutely unable to move the right leg from hip to knee. There was extreme tenderness in the McBurney region. There was no temperature, but a little vomiting and constipation. The paralysis and pain persisted for several days, then gradually wore off, after which she was brought to the city. Upon examination a small tumor, apparently cystic and lying slightly to the right of the mid-line in the iliac region, was made out. There was some tenderness in this region, but no other discomfort except the constipation, which still persisted. Thinking that this might be a hematoma, it was decided to await further developments, and the patient was instructed to keep on her back. The constipation completely disappeared, and she felt entirely well. The tumor, however, grew progressively larger. It was diagnosed as ovarian cyst, and operation was advised.

Operation.—A large multilocular cyst of the right ovary containing about three quarts of fluid was found. The tube was removed with the cyst. The left ovary contained a cyst about the size of an orange, but otherwise was apparently normal. The cyst was therefore dissected out, and the ovary left in situ.

The appendix showed signs of recent inflammation. There were a few new adhesions. It was bulbous in shape, with distended blood vessels. After removal it was found to contain blood which had degenerated, and a little pus. The condition was evidently a traumatic appendicitis.

DERMOID CYST OF THE LEFT OVARY WITH MALIGNANT DEGENERATION

In the Service of Dr. A. E. Benjamin

Mrs. S——, widow, aged 55, has had good health until quite recently, and is the mother of several children. She began to have symptoms in November, 1903, of a bloating character. The abdomen became somewhat distended, but subsided for a time, and in February, 1904, a growth was noticed in the abdomen, and pain began to be experienced. She has been declining in flesh and general health since that time. She came to the hospital April 25, 1904. A large mass was discovered within the abdomen, which seemed to be cystic in character over the greater portion of it. To the left and low down in the pelvis was a hard, adherent mass. Her temperature ranged between normal and 100°; her pulse between normal and 90.

Operation April 29, 1904. A long median incision was made. The cystic portion of the tumor was raised out of the abdomen, the hard mass below involved the left ovary and the left horn of the uterus. It was adherent to the bladder in front and to the small intestine behind. Adhesions to the bladder covered an area of about two inches square. This was separated by the Pacquelin's cautery. The growth was adherent about four inches along the bowel. It was teased away where possible, and where no malignancy seemed to exist. This exposed the healthy muscular coat of the bowel. The peritoneum was stitched over these areas. The separation was completed, where the malignancy existed, by the use of the cautery. The left broad ligament was ligated, and the left uterine horn was cut through with the cautery.

The cystic portion contained a great deal of brownish fluid, cheesy substance and hair. The patient took ether and stood the operation well. In three weeks the patient was up, and in six weeks she went to her home in the country. At the last report she was feeling fairly well.

Laboratory Report by R. L. Tibbett

Urinalysis, normal. White blood count, 10,000. Hemoglobin estimate 85 per cent.

Gross Description of Tumor.—A cyst measuring 32 cm. in length, 21 cm. through, oval in shape.

The capsule, firm and fibrous, was cut in removing the cyst from the abdomen. The contents consisted of a turbid straw colored fluid, and considerable quantity of soft homogeneous waxy substance of whitish color with small masses of hair and epithelial cells, which diagnosed it as a dermoid cyst. The base of the cyst was fastened to the intestine, the uterus and broad ligaments by firm adhesions, and was of a saucer shape, about 15 cm. across, and in depth varied from 3-5 cm. In sections this presented areas of necrosis and considerable degeneration with irregular masses of epithelial cells, arranged in a connective-tissue stroma, richly supplied with blood vessels, strongly suggesting a carcinomatous growth.

Further examination of other sections of the base is being made.

A BRANCHIAL CYST

In the Service of Dr. C. H. Hunter

Mrs. F. F——, aged 32, always healthy and robust save for a pelvic inflammation some ten years ago completely recovered from, comes for a small swelling in the neck. It can be seen as a fulness to the right close to the median line above the thyroid in a rather plump throat. It can be felt as an insensitive, deep-seated, tense, slightly movable tumor, the size of a walnut. It was first noticed some five years ago as a painless swelling, very gradually growing larger. The last two months it has increased more noticeably, occasioning some difficulty with the throat and swallowing. There is no history of injury, unless from a high collar or holding the violin.

Deciding to have it removed, she entered the hospital in July. A transverse incision along a natural fold through the skin and the superficial and deeper fasciæ, exposed a yellowish, elongated, tense cyst, an inch across. The wall ruptured in the manipulation, and a creamy, flaky pus flowed out. The cyst wall seemed sessile on the greater cornu of the thyroid bone, a patch the size of a nail being left rough and bare on the outer surface of the bone. The wound was closed without drainage by one subcuticular silver suture and silver foil. Healing was uninterrupted with a minimum of scarring. The cyst wall is smooth, rather thick, and apparently of connective-tissue. Histologically speaking this cyst wall is a connective-tissue membrane lined here and there with a very few epithelial cells. It is certainly not a lymph gland, but possibly a branchial cyst.

CLINICAL MICROSCOPY

Conducted by George Douglas Head, M. D.

CHRONIC POLYTHEMIA, WITH CYANOSIS AND ENLARGED SPLEEN

Many different diseases, independently or associated, may cause pronounced chronic cyanosis. Among such may be mentioned organic and congenital heart disease, chronic myocarditis, adherent pericarditis, emphysema, fibroid phthisis, methemoglobinuria, splenic tuberculosis, nephritis and mediastinal tumors.

Within the past four or five years there has been reported a number of cases of chronic cyanosis of obscure origin, accompanied with enlarged spleen, in which the blood examination revealed a marked increase in the red corpuscles, a normal or increased leucocyte count, and marked increase in the percentage of hemoglobin.

Collins (Medical Record, Vol. 64, page 807) reviews the clinical histories and blood findings of eleven or twelve such cases, and adds two cases observed by himself, one of which is doubtful. The blood picture in the cases reported is of interest. In Collins' first case the red cells were 8,400,000; whites, normal; hemoglobin, 100 per cent. In the second case, reds, 9,821,000; whites, 17,800; hemoglobin, 110 per cent.

In Turk's case the reds were 9,080,000; whites, 23,100; hemoglobin, 180 per cent. Rosengart's case had a red count of 10,000,000; whites, 12,000; hemoglobin, 190-200 per cent.

Hall's case counted 9,049,000 reds; 6,500 whites; hemoglobin, 170. The four cases reported by Osler had red counts of 9,952,000, 7,172,000, 11,616,000, and 8,250,000; white counts, 4,000, 21,800, 5,100 and 8,300; hemoglobin estimates of 120, 125, and 120 per cent, respectively.

In McKeen's case the reds counted 9,380,000; whites, 9,000; hemoglobin, 120.

The blood in all the cases is described as unusually dark, but thick and sticky in character.

The cyanosis, enlarged spleen, and polycythemia were the special features of the disease. While it is well known that chronic cyanosis from any cause tends to produce an increase of red cells in the blood, such an increase is usually of less degree than the estimates given in the cases reported.

Cabot speaks of a "cryptogenetic polycythemia" encountered in stout elderly women. He has seen three such cases with entire absence of disease in any organ. In one of these cases the red-blood count was more than twice the normal.

Scharold's case of acute miliary tuberculosis of the spleen, in which the spleen was much enlarged and there was profound cyanosis; Widal and Rendu's case of tumor of the spleen with cyanosis and polycythemia amounting to 6,200,000 red cells; and Moutard-Martin and Lefa's cases of large caseating nodules in the spleen without cyanosis, but with a red count of 8,200,000, are all suggestive of the condition with which we are dealing, and should lead us to be cautious about accepting the group of symptoms and blood findings described as a new clinical entity with pathological lesions peculiar to itself.

Too little is known of the blood findings in all forms of chronic cyanosis, of tumors of the spleen, of tuberculosis of the spleen, and other forms of splenic enlargement especially that of chronic passive congestion.

LEUKANEMIA

Leube ("Specielle Diagnose," Vol. 2, page 403) first described a fatal case of severe anemia in a 10-year old boy, with repeated hemorrhages and enlarged spleen in which the blood findings were those of a mixture between pernicious anemia and leukemia.

In this case the red cells numbered 256,000 per c.mm.; the hemoglobin was relatively increased; and the white cells 10,600 (a slight leucocytosis). The blood contained many normoblasts and megaloblasts. The differential count showed large lymphocytes 35.3 per cent; small lymphocytes, 49 per cent; neutrophiles, 44.1 per cent; myelocytes, 13.6 per cent.

To this condition Leube gave the name of leukänamie, and came to the conclusion from a consideration of the blood findings and pathology of the organs that the disease was a combination of pernicious anemia and leukemia. Von Yaksch (Wein. Klin. Wochenschr., 1889, Nos. 22 and 23) described a blood condition found in infants in which there was a grave anemia (820,000 reds in his case), a marked leucocytosis (54,600 whites in his case), and nucleated red cells in the blood. To this he gave the name of "anemia infantum pseudo-leukemica."

Within the past few years many clinicians have reported cases of anemia in infants and children which in part partook of the nature of pernicious anemia and in part of leukemia (lymphatic or myelogenous).

Some of these writers have endeavored to classify these cases as secondary anemias due to syphilis, rickets, tuberculosis, etc.; others maintain that they should be put in a special class, and given a separate name.

In this connection a case reported by Weber (British Medical Journal, June 18, 1904) in a man 58 years of age, with enlarged liver and spleen, is of interest. The blood findings in the case were as follows: Red count, 1,800,000; white count, 3,000; hemoglobin, 25-30 per cent; small lymphocytes, 49.4 per cent; large lymphocytes, 9.6 per cent; neutrophiles, 37.5 per cent; eosinophiles, 5 per cent; myelocytes, 3 per cent. In counting 400 white cells 24 normoblasts and 4 megaloblasts were seen. Weber classifies his case as one of leukanemia, like that reported by Leube, and thinks it a mixture of pernicious anemia and leukemia. Weber's case, however, differs from Leube's in some important respects. The patient was an adult, not a child; there was a leucopenia, not a leucocytosis; and the number of myelocytes was only 6 per cent, as compared with 13.1 per cent in Leube's case.

Weber's case, both in clinical historv and blood findings, corresponds more nearly with those cases of profound anemia and enlarged spleen, classified by Osler, Dock and Cabot as splenic anemia.

The cases of enlarged spleen, with or without enlarged liver, encountered in infants and young children, with protound anemia, leucocytosis, nucleated red cells in the blood, and high percentages of myelocytes or lymphocytes, are not easy to classify. Some of the cases exhibit blood findings more like pernicious anemia; others more like lymphatic leukemia; and still others like secondary anemia or splenic anemia, but all with some irregularities not typical of the blood picture usually encountered in any one of these diseases alone.

NORTHWESTERN LANCET

A SEMIMONTHLY MEDICAL JOURNAL

The Official Organ of the Hennepin County Medical Society

W. A. JONES, M. D.................. EDITOR

Editorial Office, 515 Pillsbury Building

W. L. KLEIN, PUBLISHER

SUBSCRIPTION, $2.00 A YEAR.

839-840 Lumber Exchange..................... Minneapolis

AUGUST 1, 1904

VACATION PLEASURES

The everlasting hills, the peaceful valleys, and the surging seas, and, incidentally, the prairies, woods, and lakes, are calling to the busy and tired worker to cease from his striving and rest his weary head or feet.

This is the season that the doctor forsakes his screened porch and inviting front steps to rush out among the hungry mosquitos and flies to change his mind and meals. He enjoys the discomforts of travel, hotels, camps, and outrageous bills because the joy of home-coming compensates him for all of his folly. He is generally improved in appearance by a rich tan color and the evidences of plain, wholesome foods.

If he has been in comforting communion with nature, and has worked for his fish with vim and vigor, he comes back to his own refreshed and invigorated. At least he has escaped from the petty trials that worry his soul and irritate his flesh. The absence of complaints that have continually been his daily companions is enough to make him put on a few pounds of fat and color, and, if perchance he returns to his duties with a disordered digestion, made evident by his coated tongue, he knows that a few days of good home-cooking will soon put him to rights.

If the Western physician could afford to follow the example of his Eastern brother, and stay away from his business three months and locate himself in a quiet, restful place, he would become acclimated to his surroundings, and be infinitely better for the change.

The average doctor, however, is fearful that his stay-at-home brother will absorb all of his business, and thus put him out of the running. The result is that he tears madly away for a few days, perhaps two weeks, and attempts to take in all the resorts he ever heard of, then rushes back full of enthusiasm, but devoid of endurance and strength. His vacation has cost money, and brought no returns.

In all probability the best and most satisfactory outing is one that takes the man far from his former environment, and surrounds him with primitive methods of living—an abundance of exercise in the open air, sleeping underneath skies, and eating the foods he can procure by his own efforts, supplemented of course by the usual necessities. He should then feel the glow of strength and cheer, and his work on his return becomes a pleasure.

Woe to the man who seeks unnatural and overreaching vacation pleasures; he burns his reserve, and comes home a wreck.

The usual vacationer, however, does the wrong thing: meets trouble and vexation of spirit, damns the country and his trip, bemoans the expense, and swears he will never do it again. His one joy is the thought that when he gets home he can do as he pleases, and, after planting himself in his easy chair, he establishes his feet in comfort, smokes his pipe, reads his paper, and sighs with great satisfaction over his restful state.

THE MEAT STRIKE

From present indications no one need fear the serious results of a meat famine. It may temporarily inconvenience the meat lover, but it will do him good to be deprived, for a time, of his customary article of diet. The strike will give health-food firms, vegetarians, and others an opportunity to advertise their "dead-and-down-timber" products, and prove the various theories of the food faddist. On the other hand, the public may learn a valuable lesson, and, incidentally, recognize that it is more economical to eat less meat, and vary their table dishes with simpler foods that possess staying and building qualities. As a rule the general public eat and waste too much meat. The meat-eating habit is easily formed, yet may be as easily broken, if food values were more carefully considered.

During the spring and summer months, when vegetables and fruits are abundant, the meat bill should be cut in half, yet how many families make the effort at reduction?

In many homes where the family is of moderate numbers, the meat bill ranges from sixty to eighty dollars a month. Among the rich or well-to-do the bill ranges from one hundred dollars upward. Where many servants are employed this amount may not be excessive, but if one could see the waste of good material, wasted unnecessarily, the conscientious housekeeper would look aghast. Meats served cold are as nutritious as those served hot; odds and ends made palatable by further cooking have a reduced food value perhaps, but serve the purpose for which they are designed—filling the individual stomach.

A good deal of such material is of no actual value, and often crowds the digestive organs by adding to their labors needlessly. Closer buying, and the use of less expensive cuts properly cooked would lower the meat bill and elevate the individual by supplying the digestion with a normal quantity of nutriment. Meat twice a day is all the average man needs; once a day for a large number would be a decided gain, provided other foods in sufficient variety were employed. Vegetables, fresh and green, or cooked in appetizing and attractive forms; grains that are unadulterated and in recognizable form before cooking, then prepared for easy digestion; fruits fresh and free from decay, cooked if need be, would serve for all possible conditions, and, if the use of fish, eggs, milk, and game were combined with vegetables and fruit, no man need feel alarm on account of the butchers' strike.

The experiments which have been carried on by scientific men have proven beyond question that men can live healthier lives and work to a better advantage by a carefully selected diet than when meat forms the bulk of foods.

The sturdy Japanese have shown by centuries of experience that eating is a habit, a bad one the way the average Anglo-Saxon lives, and a good one if not over-done but under-done.

Let the strike go on, even though the strikers are the greatest sufferers; the lesson of less food, particularly less meat, will be a valuable one from a nutritional, digestive, and economical standpoint.

THE APHASIC AND HIS RE-EDUCATION

Dr. Charles K. Mills, of Philadelphia, read a paper on the training of the aphasic, and exhibited two cases before the Neurological Section of the A. M. A.

One of the patients, a young man, had the usual hemiplegia with aphasia. He was under observation and training for nearly two years, and at the clinic was able to read correctly from a book of simple phrases. The other case, a man of forty, had made marked progress, and could talk correctly, answer questions, and gave his personal history to demonstrate his powers. Both cases when excited or embarrassed would show their aphasic states.

Aphasias from organic brain disease, particularly from arterial obstruction or obliteration, are usually considered hopeless. The majority remain permanently aphasic; a few who suffer from surface hemorrhages or meningeal inflammation make good or fair recoveries. Soluble gummas that have produced aphasia may dissipate, and the patient recover his normal method of speech. It is in the destructive forms of disease of the brain that aphasia is less likely to improve, and it is in this class of cases that Dr. Mills offers encouragement.

In many aphasics the embarrassment from fear of not being able to talk correctly is an element for consideration. The patient appreciates his errors, and refrains from expressing himself. He refrains so long that the injured center fails to functionate; hence a certain few are doomed to a permanent aphasia. When the center is absolutely cut off by changes in the circulation, reeducation of the individual is the only relief, and the grade of improvement will depend upon the willingness of the patient to be instructed, his persistence and effort, and, what is more important, the patience and tact of the instructor.

When one considers the child-like condition of an unused portion of the brain, and the time required to develop a new region, it is easy to understand that time and patience are the means to a possible end. Undoubtedly, many discouraging failures will result, but one successful case will repay all efforts. The advent of an aphasia complicated with an extensive paralysis, is an appalling condition, and no wonder many of the cases are looked upon as cases of dementia with paralysis. All cases of right hemiplegia with motor or sensory aphasia should be investigated with the greatest care, and all cases of supposed mental disease in which there are speech defects should be differentiated if associated with palsies. The cases which occur among the illiterate are difficult to diagnosticate, and in all probability are incapable of improvement. To attempt to educate a neglected adult brain would be a waste of time and energy. When there is an improvement in the hemiplegia, the education of the speech centre should be attempted. Young adults should be sent to the primary schools, or tutors should be employed at the home. Over-fatigue avoided under all circumstances, any excess strain, physical or mental, may undo all that has been accomplished.

BOOK NOTICES

THE OPHTHALMIC YEAR-BOOK. A Digest of the Literature of Ophthalmology, with Index of Publications for the year 1903. By Edward Jackson, A. M., M. D., Emeritus Professor of Diseases of the Eye in the Philadelphia Polyclinic; President of the American Academy of Ophthalmology and Oto-Laryngology, Etc. The Herrick Book & Stationery Company Denver, Col., 1904.

Each year there is published from 20,000 to 30,000 pages of literature upon ophthalmology. It becomes a difficult matter, when there is such a vast amount, for the busy practitioner interested in this specialty to find time to read that which is of value to him, and to select the material of practical use from all of the vast amount. To such this book will be a great convenience and of much value. Excepting the series of year-books edited by Head, in which there is only one small volume devoted to the eye, ear, nose, and throat, this is the first time such a work has been published in America. It fills a long-felt want, and should receive a hearty welcome by English-reading ophthalmologists, who will not be disappointed in its contents. There are 260 pages, 202 of which are devoted to a systematic review of the literature published in 1903, and the rest of which contain an index of books and monographs and of journal articles published last year.

Dr. Jackson has not burdened his work with long abstracts, but has reviewed the literature upon each subject in his own words, interspersing with valuable comments; for instance, under the heading of "Myopia," we find a subheading of "Operative Treatment," in which contributions to the literature upon this subject are quoted from; then "Methods of Operation" are described, following which "Operative Risks" are mentioned with statistics; then follow "Myopia, Statistics and Complications" and "Treatment of Myopia." No one is better qualified than Dr. Jackson to edit such a work, and the reviewer feels confident that its reception will be such as to make the continuation of the publication permanent.

FRANK C. TODD, M. D.

NEWS ITEMS

Dr. A. J. Paulson, of Philadelphia, has located in Flaxton, N. D.

Dr. E. H. McIntyre, of Worthington, has moved to Scanlan.

Dr. M. D. Westley has begun practice at Cooperstown, N. D.

Dr. R. B. Lees, formerly of White, S. D., has located at Pipestone.

Dr. F. L. Kling, a recent Hamline graduate, has located at Pelican Rapids.

Dr. C. E. Gates, State University, Class of '04, has located at Owatonna.

Dr. Stanley Clements, a graduate of Hamline, has located at Williston, N. D.

Dr. H. E. McKibben, a recent graduate of the State University, has located at Hector.

Dr. L. Q. Greeley, State University '06, of Duluth, was married in Chicago last month.

Dr. J. F. Miller, who has been practicing in South Dakota, has located in Denhoff, N. D.

Dr. T. F. Rodwell, of Cass Lake, has opened a hospital, which will be open to all physicians.

Dr. Charles Bower, a pioneer physician of Montana, died last month at Superior in that state.

Dr. R. W. Patterson, of Eagle Bend, was married last month to Miss Florence St. Clair, of Chisholm.

Dr. F. E. Burch, of Glencoe, has gone to Europe for special study. Most of his time will be spent in Edinburgh.

Dr. C. L. Chambers, of Kasson, was thrown from his carriage and so seriously injured as to be confined to his house for four weeks.

Dr. J. Sonck, of Hibbing, has moved to Chisholm. Dr. Sonck is a graduate of the Imperial University of Finland.

Dr. O. A. Burton, of Albert Lea, who went to Chicago last month to undergo an operation, is reported as doing well.

The Goodhue County Medical Society was entertained by the Rice County society last month, and a joint meeting was held.

Dr. D. N. Jones, of Gaylord, announces that in the future he will confine his attention to his hospital and to consultation work.

Dr. P. H. Irish is at the head of the movement for a hospital for Akeley. Work has been begun on the superstructure of the building.

Dr. B. S. Nickerson, State University, Class of '03, who has been an interne for the past year in St. Luke's, St. Paul, has located in Glencoe.

Dr. H. B. Grimes, a recent graduate of the University of Michigan, who has been an interne at St. Mary's, Rochester, has located at Lake Crystal.

Dr. B. K. Ellis, a graduate of the State University, Class of '03, now practicing at Alpha, was married last month to Miss Maude E. A. Barney of Alpha.

Drs. Avery and Desmond, of Aitkin, feeling the need of hospital facilities, have induced one of the residents to build an addition to her home, and open a small hospital.

Dr. Anders E. Johnson, of Madison, a State University graduate, Class of '03, has returned from a vacation of two months in Michigan, bringing with him a June bride.

Dr. W. A. Brand, who graduated this year from the State University, has charge of the practice of Dr. G. R. Pease, of Redwood Falls, during the latter's absence for the summer.

Dr. W. H. Hanscom, of Minneapolis, died July 16th. Dr. Hanscom graduated from the State University with the Class of '89, and has been a prominent citizen of South Minneapolis for a number of years.

Dr. A. T. Mann, of Minneapolis, has returned from a four months' trip in Europe. Dr. Mann will soon give an account in THE LANCET of some of the work in surgery he saw done by men of world-wide fame.

At the annual meeting of the Grand Forks (N. D.) Medical Society, held last month at Grand Forks, N. D., the following officers were elected: President, Dr. George Williamson, Ardoch; vice-president, Dr. R. H. Beek, Lakota; treasurer, Dr. A. A. Westeen, Grand Forks; secretary, Dr. H. H. Healy, Grand Forks.

Seattle physicians have subscribed $100,000 toward putting up a $300,000 building in that city for the exclusive use of physicians, and the stores in the building, on the ground floor, will be under their control. The building will contain 130 offices, with 16 large reception rooms and as many waiting rooms. A library, lecture-room, and operating-room will be provided on the top floor. Such a building is really needed in every large city, and it will pay well on the investment.

Dr. John Punton, superintendent of the Punton Sanitarium, or Home for Nervous Invalids, at Kansas City, Mo., is adding a large addition to the sanitarium building in response to an increased demand for accommodations by patients. There is also being built a large extension to the verandas, which will be used by the guests as places of recreation. The management of the sanitarium appreciates the support received from the medical profession and has great confidence in the continued success of the institution.

The following physicians were granted licenses to practice in North Dakota last month: Dr. A. G. Anderson, Hillsboro; Dr. E. D. Spear, Nome; Dr. Harry J. Yowerlock, Gardner; Dr. W. C. Dickenson, Cannonball; Dr. R. B. Stephenson, Hillsboro; Dr. Olaf A. Knutson, Minneapolis; Dr. Isaac W. Lyman, Grand Forks; Dr. L. A. Dahl, Mount Morris, Wis.; Dr. G. J. Gislason, Nimedahl; Dr. John P. Brasted, Washburn; Dr. M. D. Westley, Cooperstown; Dr. A. O. Arneson, Northwood; Dr. Wm. F, Baillie, Hunter; Dr. E. G. Sasse, Lidgerwood; Dr. Geo. A. Durine, Westhope; Dr. A. J. Paulson, Minnesota; Dr. C. J. McGovern, Larimore; Dr. John T. Wood, Hannah; Dr. Nils Tonnes, Fargo.

The Wabasha County Medical Society held its 36th annual meeting at Lake City last month and it is thus just as old as the State Medical Association. Dr. W. T. Adams, the president, presided, and an excellent program was presented, five live papers being read. Lake City is a delightful place for a summer meeting, and the society was entertained in a delightful manner. The physicians of Lake City gave a dinner and Dr. A. J. Stone made provision against the thirst that generally follows dinner. Camp Lakeview was visited, and the entire day was passed in a delightful way.

The following were elected officers for the ensuing year: President, Dr. J. C. Adams, Lake City; vice-president, Dr. L. Ingram, Zumbro Falls; secretary, Dr. W. F. Wilson, Lake City; treasurer, Dr. E. H. Bayley, Lake City; delegates, Drs. W. T. Adams and W. F. Wilson.

NORTHWESTERN LANCET
A Semimonthly Medical Journal
VOL. XXIV AUGUST 15, 1904 No. 16

SOME OF THE DIFFICULTIES TO BE OVERCOME IN THE RADICAL MASTOID OPERATION FOR THE CURE OF CHRONIC PURULENT OTORRHEA*

BY FRANK ALLPORT, M. D.
Clinical Professor of Ophthalmology and Otology, Northwestern University Medical School, Etc.
CHICAGO

In a ten-minute paper it is of course impossible to thoroughly treat the subject under consideration, and the writer will merely attempt a rambling and disjointed discussion on the objections to the radical mastoid operation for the permanent relief of chronic purulent otorrhea, which may be broadly defined, as expressed by Berens, to be a suppurative process that has persisted more or less actively for six months or more. The indications for the ordinary operation for a mastoid abscess will be utterly ignored through lack of time, and from the fact that its urgencies and necessities are well understood and generally recognized. The writer believes that the asking of a single question should place the necessity for the radical mastoid operation, for the relief of chronic purulent otorrhea, in its proper light.

Why should the ordinary rules of surgical expediency, which point to the removal of necrotic and dangerous tissue in other portions of the body, be more or less ignored in cases of intractable chronic purulent otorrhea?

This question is emphasized by the fact that in almost all such cases the morbid changes are not confined to the middle-ear space, but are continued back through the aditus ad antrum to the antrum, and usually into the mastoid cells. It may be stated with reasonable certainty that instances of pure middle-ear suppuration, even if accompanied by necrosis, can usually be cured by the conservative treatment with which the average surgeon is quite familiar; bearing in mind that occasionally a removal of the malleus and incus, together with a middle-ear curettement, may be necessary to effect a complete healing. But where such measures fail to cure, is there any good reason for not advising the radical operation, which throws the meatus, middle ear, aditus ad antrum, antrum, and probably the mastoid cells, into one large accessible cavity, thus rendering it possible to eradicate every vestige of diseased tissue, and to obtain a healthy healing of the parts, such as is being continually accomplished in all other parts of the body by general and special surgeons? In answering this question a number of replies must receive some consideration. In the first place, many ultraconservative physicians have been for many years preaching the gospel of non-interference in cases of aural discharges, until many of the lay community, and some medical men, who should know better, believe that an aural discharge is a fortunate vent for the drainage of unhealthy material, whose cessation would cause brain disease and death. Again, the same misled doctors and their lay followers observe that many people carry discharging ears for years, and inasmuch as no calamity has befallen them, listen with incredulity and scepticism to the wiser and more advanced surgeon, who enlarges upon the danger of discharging ears, and advises operations for their cure. These objections, however, are met to a greater or less extent in all fields of surgery, many of the ultraconservative medical men and their lay followers championing a general prejudice against all operations, and really never setting aside their preconceived beliefs until death has nearly stamped a victim for his own.

---

*Read before the Chicago Medical Society, April 27, 1904.

The dangers of the radical mastoid operation are such that, while they should not deter the competent and progressive surgeon from undertaking the work after the conviction for its necessity has been reached, the operation should not be performed without much study, experience, and observation, and not until its urgency is conscientiously manifested. The question as to what should finally cause the surgeon to advise the radical mastoid operation is one of great importance. Cases of aural suppuration accompanied with symptoms of grave intracranial and constitutional complications will not be considered, as time forbids, and the necessity for operative procedures in such cases is so plain as to be unmistakable. The time for advising operation in quiescent cases of chronic intractable tympanic suppuration is, however, another matter, and opens up a wide field of discussion in which this paper may not participate on account of its required length, and would require an answer to several questions, as for instance: How long must a discharge continue before it can be called "*chronic*"? and what can be properly called an "*intractable*" tympanic discharge? While many interpretations of such classifications are possible, and while no hard-and-fast rule for chronicity and intractability can, or should be, established, the writer believes that in a general way an aural discharge may be considered both chronic and intractable when it continues to exist after about six months of faithful and intelligent care and treatment.

The chief objection to the radical mastoid operation is the production of facial paralysis (an accident which should seldom, if ever, occur after the operation for acute mastoid abscess), and this is a menace of no small degree, and one from which the average operator may well shrink. It is a most distressing sight for a surgeon to see a face pulled to one side after anesthetic unconsciousness has passed away, and to realize that this is the work of his hands. If this disheartening appearance is shocking in an obscure hospital patient with few or no friends, and little or no influence, what must it be to witness such an occurrence amid wealthy and influential surroundings, where the bad tidings will spread like wild-fire to the undoubted detriment of the operator's reputation? While these circumstances, under any social conditions, are bad enough, the possibilities for a suit for malpractice must never be forgotten, nor the effect of this drawn and one-sided countenance upon the community at large, and the trial judge and jury in particular. It may be said, however, for the encouragement of operators who are doing this character of work, that these cases almost invariably recover in a few weeks or months, and those cases which do not recover may usually be successfully operated upon by the attachment of the facial nerve to the hypoglossal or spinal accessory nerves, as recommended and successfully practiced by Ballance and others. The facial nerve may be injured in any portion of its course, from its entrance into the middle ear at the upper, middle portion of the tympanic wall, to its exit from the skull at the stylomastoid foramen. Contrary to popular belief, the facial nerve always remains within the confines of the petrous portion of the temporal bone, and does not enter the mastoid protuberance at all. On chiseling away the mastoid cells the hard petrous covering of the nerve may be clearly seen at the anterior portion of the cell structure, just back of the bony meatus and below the floor of the antrum, and should be carefully avoided, although considerable protection is afforded by its sclerotic casing. The shell of bone protecting the nerve as it passes through the tympanum is on the contrary very thin, and sometimes entirely absent in spaces, thus accounting for the occurrence of facial paralysis during middle-ear suppurations. Most cases of facial paralysis following mastoid operations are due, *not* to injury of the nerve after it leaves the tympanum on its way to the stylomastoid foramen, where it is protected by its petrous covering, but to the breaking of the walls of the tympanic Fallopian canal by probing, chiseling or curetting, an accident which may occur to the most painstaking operator, especially where openings of the canal either of a necrotic or congenital nature are present. Indeed facial paralysis is said to occur from the mere jarring of the nerve during chiseling proceedings, an opinion which argues in favor of gentle manipulations, a soft head-cushion, and more familiarity with a reliable dental engine, instead of the chisel for the bone work.

Another danger to be avoided during the radical mastoid operation is the infliction of an injury to the horizontal semicircular canal. At the extreme upper and posterior portion of the inner wall of the tympanum, between the facial nerve and the foramen ovalis anteriorly, and the mastoid antrum posteriorly, can be seen the hard bony convexity, covering the horizontal semicircular canal, usually easily recognized as a yellowish prominence in the middle of the inner tympanic wall. Being situated just at the floor of the angle, where the antrum merges into the aditus ad antrum, injury to this portion of the internal ear may be easily inflicted by a blow of the chisel, especially after the superior posterior wall of the bony meatus has been cut away in the performance of the radical operation. Nevertheless, it would seem that this accident rarely occurs, as not many instances of disturbances of equilibrium and dizziness are recorded after such surgical procedures, symptoms which assuredly would be expected after injury to these centers of equilibrium, and symptoms which, fortunately, as a rule pass away in a few days. A partial explanation of the infrequency of injury to the facial nerve on its downward course, and of a similar infrequency of injury to the horizontal semicircular canal during the radical operation, resides not only in their hard and compact coverings (which protects them from accidents, and to the eye of the operator distinguishes them from their bony surroundings), but also in the fact that they lie below the plane of proper chiseling procedures, as, in cutting away the posterior meatal wall, while the initial opening should be wide the receding space should gradually diminish in size, as the inner wall of the tympanum is approached. Thus the space produced should be triangular in shape, with the apex at the inner wall of the tympanum and the base at the opening of the bony meatus. By thus carefully chiseling, both the descending portion of the facial nerve and the convexity of the horizontal semicircular canal will lie outside the lines of incision, and escape injury. Both these vulnerable anatomical points may also usually be avoided by the use of the Stacke protector as the last few pieces of bone are removed to make the triangular space or opening necessary for the careful inspection and treatment of the middle ear, antrum, etc. The protector should also be used in chipping away the ledge of bone separating the attic from the meatus, without which procedure a perfect cure is highly improbable. It should not be forgotten, however, that the introduction and retention of the foot-plate of the protector may in itself injure the facial nerve and semicircular canal unless carefully introduced and used, and that the same thing may occur from undue force in malletting through the chisel on to the foot-plate of the protector through an undue sense of security.

The wounding of the sigmoid portion of the lateral sinus is undoubtedly one of the dangers of the radical mastoid operation, although the writer believes that this danger has been very much over-estimated, both as to its probability and also as to the damage accomplished by such an accident. The knee of the sinus usually lies about an inch back of the posterior wall of the meatus, except in children and people of small heads, when its proximity is nearer. It may lie further backward or further forward, even to the extent of impinging close upon the meatal wall and absolutely preventing the performance of the classical mastoid operation. Vascular connections exist between the sinus and the cells, thus affording at least one explanation as to the frequency of sinus infections. The outer osseous covering of the sinus is easily broken, and care should be exercised to prevent this accident during operative procedures, still no especial anxiety need be felt if this occurs, although the subsequent operative steps are always thereby considerably embarrassed through constant vigilance lest the dural covering be also ruptured. Even, however, should this occur the prompt use of tampons will almost always control the hemorrhage, and the danger of infection is not great. The writer believes that the danger is not so much in damaging the sigmoid sinus, as in the improper handling of cases where phlebitis and thrombosis are discovered; and as these conditions are generally to be found, if at all, in cases of acute or subacute mastoiditis, or in acute exacerbations of chronic mastoiditis and otorrhea, where the operation is clearly indicated as a life-saving measure, it need not be considered in the present paper.

Another danger in the radical mastoid operation is the possibility of exposing the dural covering of the temporo-sphenoidal lobe or the cerebellar lobe of the brain, and here it may also be said that in the opinion of the writer this danger has been much overestimated, and that but little anxiety need be entertained, even if such accidents occur.

There is, of course, some danger in opening up an avenue of infection through the foramen ovale, in case of the accidental removal of the stapes, during the extraction of the malleus and incus, or in middle-ear curettement, or in entering the carotid artery in front of and beneath the middle ear, or the jugular fossa directly underneath the tympanum, by too vigorous operative measures, but these accidents, especially the two latter, are of extremely improbable occurrence, and should not enter into our calculations in estimating the advisability of an operation.

While, therefore, meningitis and other intracranial complications, and accidents to the facial nerve, horizontal semicircular canal, sigmoid sinus, etc., may result from the performance of the radical mastoid operation, the only occurrence that seems to the writer to sustain much weight is the embarrassing and unfortunate occurrence of facial paralysis. This is surely a valid objection, and one that demands consideration, but the only suggestion that can be offered by the writer is, not to neglect or abandon this truly admirable operation, but to perfect our skill, knowledge, precautions, and surgical technique so that this and other accidents and misfortunes will not occur. So far as danger to life is concerned, in a properly executed radical operation for the cure of chronic purulent otorrhea, when no dangerous symptoms are present, the writer believes that such an occurrence, while of course possible, is extremely improbable, and he has never seen it in his own practice.

Another objection to the operation is the fact that the ultimate result is not always successful as to the cessation of the discharge. Such results, after passing through the dangers of the operation, the protracted healing and the considerable expense, are not reassuring, and naturally discourage both the operator and the patient. Unsatisfactory issues of this nature are, however, in the opinion of the writer, practically always unnecessary, and due to improper and insufficient operative procedures, such as lack of care in the extermination of every particle of necrosed bone, or insufficient curettement of the Eustachian tube opening, which should be thoroughly scraped, cleansed, and, if possible, sealed, as its office after this operation is lost, and its orificial patency only serves to perpetuate a discharge, etc.

The failure to remove the upper ledge of bone between the meatus and tympanic attic, is also frequently the cause of imperfect healing, as when operative measures cease the upper meatal wall should be perfectly continuous with the upper attic wall or the tegmen tympani, so that a bent probe touching the tegmen tympani can be pulled (still touching the bone) completely out of the meatus without meeting any bony obstruction. Unless this most important step is taken and the attic destroyed as a separate entity, the diseased territory cannot be perfectly curetted, cleansed and treated, and will always remain a focus of disease.

Another objection which is frequently raised, is the possible bad effect upon hearing. While this result, with a properly executed operation, is a possibility, the writer believes its magnitude has been very greatly increased, and that a vast majority of cases will either emerge from the operation with uninjured or improved hearing. We have long since passed the time when the drum-head and ossicles can be regarded as *essential* to hearing. No doubt when in a reasonably healthy condition they are a great assistance to the best hearing, but the writer believes that many people could hear much better without drum-heads or ossicles. For instance, the writer believes that a perforated drum-head, embarrassed by tympanic adhesions, and accompanied by necrosed and retracted ossicles, surrounded by fungating granulation tissue, so far from assisting hearing, actually impedes the transmission of sound waves to the labyrinth, and that the hearing of the individual will in all probability be improved by a removal of this obstructing pathological mass. Such are the conditions usually found to a greater or less extent in cases of chronic purulent otorrhea, and form the basis for the cheerful prognosis of good hearing capacity after the operation, and the results in the writer's cases, and in the cases of most other surgeons, fully corroborate the foregoing statements.

When surgeons drained the wound, both through the meatus and the unsutured mastoid opening, a forceful objection to the operation could be found in the extremely protracted healing, and in the resulting deformity, consisting in an unsightly meatal opening, a lowered and protruding auricle, a disgusting post-auricular scar, and often in a large and permanent mastoid aperture. As the operation is at present performed, however, the mastoid wound is entirely sutured at the time of operation, thus preventing a post-auricular opening, and by holding the parts up and in place, dispensing with the malposed auricle. A properly made Panse, Küster, Ballance, or other meatal flap, does not deform the meatal opening, and assists greatly in the rapid lining of the operative cavity with new skin, and when this is combined with the grafting of skin sections to the exposed bone, as recommended by Ballance, Dench, and others, little is left to be desired tending toward a perfect and satisfactory result. The writer's patients can usually leave the hospital in less than two weeks, and a thorough cure is generally effected in from four to eight weeks.

From the foregoing answers to some of the important objections to the radical mastoid operation, it will be seen that a great and favorable evolution of improved operative technique has taken place through the last few years, and that the operation is gradually losing its terrors and disadvantages, and that conscientious, honest surgical work and investigation will soon quiet our fears by placing this operation in such a position of safety and assurance that its performance cannot be avoided by those pretending to do the best and most advanced aural surgery.

The foregoing pages of this fragmentary article have been devoted largely to a recitation of the principal objections to the radical mastoid operation, an attempt at answering these objections, and a few words of inspiration toward future work and investigation. The writer cannot leave the subject, however, without briefly reminding his hearers that purulent tympanic infections are responsible for about one-half of the brain abscesses of the world, and that in the United States alone 4,000 otitic brain abscesses occur annually, which proportion is trebled in Germany; that chronic purulent otorrhea is responsible for most of these; and that death occurs in about one to every thousand ear cases (of all kinds) that come under treatment. With an array of figures like these we must inevitably recognize the importance of the subject, and we cannot, and should not, seek to evade surgical responsibility if chronic purulent otorrhea is producing this significant mortality. Hundreds of cases of chronic purulent otorrhea present themselves to us to be cured. Shall we be satisfied, with these statistics before us, with eternally, month after month and year after year, cleansing, drying, powdering, scraping these middle ears, when we must know that the real seat of the disease can never be touched except by the radical operation? Shall we shirk operative responsibility or enhanced labor? Or shall we not rather by study, investigation, and operative experience so perfect our knowledge, precautions, and operative technique that this great surgical procedure may be performed with practically no danger either to life or function, thus enabling us to perform our legitimate part in lessening the world's mortality? These questions must be settled by each of us according to his personal equation.

IMMUNIZATION

J. Dutton Steele, M. D., of the University of Pennsylvania (Therapeutic Gazette, July 15, 1901) cites 17,516 immunized cases collected by Biggs, of which only 129 developed mild diphtheria in thirty days; twenty patients were attacked after thirty days, and in all there were but two deaths.

There seems to be a variety of opinion as to the duration of the artificial immunity thus induced, but at all events the tendency is unquestionably in the direction of larger doses of antitoxin. As the author just quoted says: "The dose (immunizing) which was originally placed at 200 to 500 units has advanced so that now from 500 to 1,000 units are more frequently given." It is a well-known fact that the Klebs-Loeffler bacillus may be and has been repeatedly found in the throats of immunized nurses and others exposed to diphtheria, without the appearance of clinical symptoms of the disease.

THE ETIOLOGICAL RELATIONSHIP BETWEEN CANCER AND ULCER OF THE STOMACH*

BY GEO. DOUGLAS HEAD, M. D.

Professor of Clinical Microscopy and Medicine, University of Minnesota

MINNEAPOLIS

That cancer of the stomach may be engrafted upon the base of an ulcer or its scar has been established by the reported cases of many observers. Hemmeter ("Diseases of the Stomach," page 570) states that Kollmann has collected 14 cases and that about 14 more have been reported in the literature. Futterer (Jour. A. M. A., March 15, 1902), who has made a most careful search of the literature, has collected 52 cases, including those reported by himself. Other cases not mentioned in Futterer's article have been reported by Billings (American Medicine, April 6, 1901), Kaufmann (Amer. Jour. Med. Sci., Vol. 127, No. 4, page 655), and Du Mesnil (Nothnagel's "Encyclopedia Diseases of the Stomach," page 570).

Granted that it is established beyond doubt that cancer may be grafted upon ulcer of the stomach, the frequency with which this combination of lesions exists is a question upon which there is much difference of opinion. On the one hand are those who take the view that cancer is only very rarely engrafted upon ulcer of the stomach.

Kollmann, in the Tübinger Clinic, states that in the last twenty years the combination of cancer superimposed on ulcer had not been seen.

Duplant of Lyons, in 1898, published a thesis in which he declared that it had never been proven that cancer of the stomach succeeded ulcer. On the other hand Zenker maintains that most cases of gastric carcinoma originate in an ulcer base.

Futterer (Jour A. M. A., March 15, 1902) concludes that a large percentage of gastric cancers have a beginning in ulcer or its scar.

Graham (Trans. Minnesota State Med. Soc., 1902, page 76) makes the statement that 88 per cent of the cases of cancer of the stomach in his clinic were preceded by a history of ulcer.

Dunn (Trans. Minnesota State Med. Soc., 1903, page 87) quotes freely from statistics showing the frequency of cancer superimposed upon ulcer, and states that such an event being common, surgical intervention is the best method of dealing with ulcer to prevent the formation of cancer.

Between these two extremes stand the great majority of pathologists and clinicians, who, while recognizing the existence of cancer superimposed upon ulcer, lay but little stress upon the ulcer *per se* as an etiological factor in the production of gastric cancer.

Rosenheim places the percentage at 6, Dittrich estimates the frequency at 5 per cent, Eppinger at 11 per cent, Haeberlin at 2-3 per cent, Van Valzah and Nisbet at 5 per cent.

The importance of this subject cannot be overestimated. If cancer of the stomach is engrafted upon ulcer in any such percentage as stated by some writers (88 per cent by Graham), then it is the duty of the internist and general practitioner to advise the surgical removal of all ulcers of the stomach for fear of a later developing carcinoma. If, however, these high estimates are not borne out by a more careful study of the subject, then gastric ulcer can be safely treated as it has been in the past, and the services of the surgeon reserved for those cases complicated by pyloric stenosis, dangerous hemorrhage, perforation of the stomach or duodenum, obstructive adhesions, and the like.

In this paper the writer has endeavored to gather together evidence which bears upon the solution of this question. Turning first to the post-mortem records we ask what knowledge can be gained from this source. Here we encounter a difficulty which makes the evidence furnished by the pathologist of little value. All forms of gastric carcinoma, except schirrhus, break down and ulcerate. Such ulceration appears early in some carcinomata, and late in others. Sometimes the neoplasm becomes entirely disintegrated, and the surface of the ulcerative process is smooth and level.

---

*Read before the Minnesota State Medical Association, June 1-3, 1904.

To determine in a given case at autopsy whether the carcinoma is primary and the ulceration secondary, or the ulcer primary and the carcinoma engrafted thereon, is very difficult, if not in many cases impossible. The secondary ulceration encountered in carcinoma is said to be distinguished from ulcer with surrounding cicatricial tissue in that its edges are raised and have rampart-like borders.

Hauser (Das Chronische Magengeschwur, Leipzig, 1883), who has carefully studied the pathology of the subject, gives as the distinguishing feature that in primary carcinoma there is never a sharp division between the muscularis and the tissues at the base of the ulcer; while in primary ulcer the muscularis turns up diagonally toward the mucous membrane.

Futterer agrees with Hauser as to the behavior of the muscularis, but says that where the carcinoma infiltrates the ulcer there is a fish-hook-like upward bend of the muscularis.

Wm. Welch ("Pepper's System of Medicine," Vol. II, page 536) sums up the pathological evidence in these words:

"It is difficult to prove anatomically that gastric cancer has developed from an ulcer." "No etiological importance can be attached to the occasional association of cancer with open or cicatrized simple ulcers in different parts of the same stomach."

It seems fair to assume that where a small carcinoma is found at post-mortem infiltrating a part of the border of an ulcer of the stomach a bona fide example exists of carcinoma engrafted on ulcer. But the number of such reported cases is too small to prove the point at issue without admitting the possibility of a coincidence. However, even though the macroscopical or microscopical appearance of an ulcerative process in the stomach wall cannot furnish conclusive evidence as to whether the ulceration is primary or secondary, the post-mortem records do give us some suggestive facts bearing upon the question under discussion. If cancer is superimposed on ulcer, then cases of cancer of the stomach in young persons, in which class ulcer is common, ought to show an increased percentage of cases of cancer beginning in ulcer. Osler and McCrae ("Cancer of Stomach," 1900) have collected 6 cases of gastric cancer in the first decade, 13 in the second decade, and 6 in the third decade. In not one of these 25 cases is there any mention of pathological evidence going to show that the cancer grew upon an ulcer base.

If cancer is often engrafted on ulcer the post-mortem records will show the greatest percentage of ulcers located in the same regions of the stomach where the greatest percentage of cancers are located. Welch, in 793 ulcers of the stomach where the situation of the ulcer was recorded located the largest number, 36.3 per cent, in the lesser curvature, while in 1300 carcinomas of the stomach only 11.4 per cent were at the lesser curvature. Twelve per cent of the ulcers were at the pylorus, while 60.8 per cent of the cancers were located in this region. On the posterior wall of the stomach 29.6 per cent of the ulcers were located, against 5.2 per cent of the cancers; on the anterior wall of the stomach were 8.7 per cent of ulcers against 2.3 per cent of cancers; at the cardia 6.3 per cent of ulcers against 8 per cent of cancers.

To summarize: the pylorus comes first as the most frequent seat of cancer, but comes third as the seat of ulcer. The posterior wall comes second as the seat of ulcer, and fourth as the location of cancer. The cardiac end is third as the seat of cancer, and fifth as the location of ulcer.

If ulcer were a prominent etiological factor in the production of cancer we ought to find the most cancers growing from the lesser curvature rather than the pylorus. From this pathological evidence there seems to be no relationship between ulcer and cancer of the stomach, when studied from the standpoint of location in the stomach wall.

The post-mortem statistics give further evidence bearing upon this question. If carcinoma were commonly engrafted on ulcer, one would expect to find cancer predominating in the sex in which ulcer was most frequently encountered. The post-mortem records, however, show as follows:

In 1699 cases of ulcer collected by Welch, 40 per cent were in men and 60 per cent in women; of 2214 cases of gastric cancer 55 per cent were in men and 45 per cent in women. Fox and Ledoux-Lebard found cancer of the stomach equally in men and women. Reiche (Deut. Med. Wochenschr., 1900, XXVI, No. 708) in statistics from Hamburg found cancer of the stomach in 56 per cent of men and 44 per cent of women. In Osler and McCrae's series of gastric cancers 81 per cent were in men, and 19 per cent in women.

These facts do not accord with the idea that ulcer plays a prominent part in the causation of cancer, since women who have the most ulcers have the fewest cancers, while men who have the most cancers have the least number of ulcers.

In this connection I wish to call your attention to Futterer's records of his collected cases showing cancer engrafted on ulcer. Nineteen were in women, and 24 in men. The figures do not correspond at all with the frequency of ulcer as seen in men and women, but do correspond almost exactly with the frequency of cancer as met with in men and women. Is it not probable that most of the cases collected by this writer were in reality cases of carcinoma of the stomach undergoing secondary ulceration?

Turning from the consideration of the pathological evidence to that offered by clinical study, we find still other facts which are helpful in coming to a conclusion. Ulcer being a disease of early adult life, if the engrafted cancer idea were correct we should expect to find in cases of cancer developing before 30 years of age a large percentage giving a history of preceding ulcer. On the contrary, the two prominent features of the reports are a rapid onset and acute course without previous stomach trouble. Of Mathieu's 19 cases under 30 years the average duration of the disease was three months. Of Osler and McCrae's 4 cases in the third decade, not one was ill over six months, and in two the sickness was only of four months' duration. The onset in all but one was sudden, and gave no suggestion of a previous ulcer. All the cases were in men. The weight of this point in the evidence is nullified in part by the small number of cases reported.

The symptoms of ulcer are those of a chronic gastric trouble beginning in young adult life, and continuing off and on with remissions for years. In the decades of life where cancer is common the clinical study of the cases reveals almost total absence of the symptoms of ulcer, the sickness, as a rule, beginning acutely with nausea, vomiting, loss in weight, and the presence of a tumor in the abdomen in persons previously in good health.

Let us now turn to the clinical histories of those cases of cancer developing after 40 years of age, and ascertain what percentage give a history of previous ulcer. The studies of Osler and McCrae furnish the best evidence upon this point. Of the 150 cases of gastric carcinoma in which special attention was given to the securing of an accurate early history only 4 cases gave a history pointing to ulcer and the authors add, "in none could it be positively diagnosed." Many patients, however, with ulcer give none of the typical symptoms of this disease, but only complain of gastric distress or indigestion. It is, therefore, necessary to know what percentage of these cases gave a history of any previous stomach disturbance. Of the 150 cases 107 gave no history of stomach trouble prior to one year before coming under observation. This is 71 per cent of the total number of cases, and is a strong argument against the theory that ulcer plays an important role in the etiology of cancer of the stomach.

Any patient with cancer of the stomach who has had, up to one or two years previous to coming under observation, no gastric disturbance gives little clinical evidence of gastric cancer superimposed on ulcer. His gastric symptoms in most cases must be due to the beginning of the cancer itself.

Ulcer of the stomach in a vast majority of cases is a disease of young adult life; carcinoma of the stomach is a disease of advanced life. Where cancer is engrafted upon ulcer the vast majority of cases give a prolonged history of gastric trouble lasting over years and terminating in cancer. It may be possible in some few cases for an acute ulcer to immediately develop carcinoma within a year, but such is certainly not the rule. Graham states that in three of his cases of gastric carcinoma the history of ulcer did not cover two years.

Without more conclusive evidence than has as yet been offered it seems more reasonable to consider these cases of short clinical history, not as instances of gastric ulcer with later developing carcinoma, but as primary gastric carcinoma from the beginning.

All writers of recent years agree that the great majority of patients with cancer of the stomach give no history of prolonged gastric disturbance.

Ewald, Boas, Hemmeter, Osler and McCrae, Stockton, Riegel, and others give the same clinical picture: a sudden onset of the gastric symptoms in persons in previous good health. In only 33 of the 150 cases reported by Osler and McCrae was there any history of previous gastric trouble. In 17 of these the disturbance was confined to isolated attacks. Eleven of the cases had chronic gastric trouble for years. In a series of 150 patients suffering from other diseases taken for comparison, 28 gave a history of old stomach trouble, only 5 less than the cancer series. There is therefore little evidence to be secured from the clinical history of cases of cancer of the stomach pointing to ulcer as a basis for the development of the disease.

All writers upon this subject agree that cases of cancer engrafted on ulcer usually show the presence of free HCl in the stomach contents after a test meal. Here we have a further standard by which to test the theory under consideration.

Riegel, speaking of cases of cancer succeeding ulcer, says such cases are characterized by normal gastric secretion, which may continue until death. They are distinguished by this symptom (presence of free HCl) from the majority of cases of ordinary carcinoma of the stomach.

Of Osler and McCrae's cases, 80 out of 87 in which gastric contents examination were made, showed a complete absence of free HCl. Granting that all the cases showing the presence of free HCl were of ulcer basis, only 8 per cent could be counted in the category of carcinomas engrafted upon ulcer. In the light of this evidence, therefore, the idea that cancer is commonly engrafted upon ulcer fails to be established.

The total mortality for cancer of the stomach is about 1.5 per cent of all deaths. Ulcer or ulcer scars have been found in about 3.32 per cent of all persons coming to autopsy. Ulcer and cancer have been encountered at post-mortem in different parts of the same stomach entirely isolated and without any apparent relationship each to the other. In view, therefore, of the evidence, clinical and pathological, at present at our command it does not seem reasonable for us to accept the views of those who believe that cancer of the stomach is commonly engrafted upon ulcer. The writer believes that the evidence is entirely conclusive, and that in the light of the facts here brought forward it seems fair to conclude:

1. That cancer of the stomach is only exceptionally engrafted upon ulcer.
2. That such an event exists in not more than 6 to 8 per cent of the cases of carcinoma.
3. That ulcer of the stomach plays a very minor role as a predisposing factor in the causation of gastric cancer.

DEGENERATIVE DISEASES OF THE HEART AND ARTERIES*

By J. C. Adams, M. D.

ELGIN, MINN.

I exclude from consideration the degeneration caused by chlorosis, chronic anemias, idiopathic anemia, acute fevers, and wasting diseases, and consider only senile degenerations. Having practiced in one community for more than thirty years I have had many cases under my observation for years, and have thus been able to note their pathological tendencies.

The blood being the life, it is important that it should be of good quality, and that the mechanism by which it is distributed should be faultless. The gross anatomy of the heart and arterial system is so well understood that I pass it by. The histology of the arteries must be known in order to appreciate the effect of disease. Each artery has three coats, or tunics, an outer (called the adventitia), composed of blood vessels, absorbents, and nerves, held together by connective tissue. The middle coat (called the media) consists of elastic fibres and muscular fibres. The inner lamina of this tunic is comparatively dense and homogeneous in structure, and is destitute of blood vessels. The internal coat (called the intima) is composed of two layers of cells. The outer layer consists of flat, nucleated cells, quadrangular, elongated, and joined by minute fibrillæ in the axis of the vessel, and the inner layer is made up of flat polygonal nucleated cells, loosely connected by cement substance; so in thinking of the intima, by far the most important of these three tunics, conceive of two layers of flat nucleated cells resting on a firm, bloodless basement membrane. Any infectious disease that poisons the blood, especially syphilis, or the retained excrementitia of nephritis or diabetes mellitus, or alcoholism initiates an endarteritis.

---

*Read at the annual meeting of the Wabasha County Medical Society, Lake City, July 7, 1904.

The cells of the intima become swollen and softened, and project into the lumen of the artery, diminishing its calibre. This does not occur continuously over the surface of the intima, but in hillocks here and there. The apices of these projections, which correspond to the neuclei, break down, leaving minute excoriations or ulcers. A number of these excoriations are coated with a layer of fibrin, which under the microscope shows round and fibrillated cells—a beginning of organization. In the meantime the cells of the deeper layer of the media are undergoing proliferation and hyperplasia. The result is that the calibre of the arteries is permanently diminished by the new growth obstructing their lumen. This is a *constant* part of the pathology of syphilis, and it affects principally the smaller arteries, and especially those of the brain and spinal cord. This obstruction of the minute arteries and arterioles, the result of infectious and specific diseases, I have thought necessary to describe, because the senile degenerations with which I am mainly concerned are prone to attack by preference those parts which have been damaged by a previous inflammation. That degeneration of the arterial tunics which results in thrombosis, aneurism, rupture and consequent hemorrhage, and the secondary softening of the brain, is not caused by inflammation, but by malnutrition. It is necrobiosis, or individual cell death.

The tissue affected presents to the eye a stiff, blanched appearance, and under the microscope is seen to consist of granular corpuscles, fat droplets, and cholesterin crystals. When following the natural wear and tear of life, it attacks mainly the largest, and arteries of the second class. When preceded by the endarteritis of infectious diseases, alcoholism, and syphilis, it affects mainly the small arteries, especially those of the brain. The atheroma does not affect a large area of the intima, but occurs in small and smaller spots. The disease begins in the portion of the artery farthest from the blood supply—in the elastic coat of the fenestrated media. The internal layer of the intima projects into the lumen of the vessel, and is soft and pulpy. Simultaneously the media becomes disintegrated. The weakened vessel-wall is pouched by the blood pressure, and we have numerous minute aneurisms. Where the atheromatous spot is very large, the pouching is extreme, and large aneurisms are formed. In the progress of the atheromatous process, granular matter is deposited in the fenestrated layers of the media, which, aggregating, form laminæ. This is looked upon as a conservative process tending to prevent rupture, because it is found that the smaller aneurisms are fortified by these earthy laminæ to a much greater extent than the larger aneurisms. In rare instances the ascending aorta is greatly dilated and pouched with small aneurisms. In other cases it is less dilated, but is converted into an almost complete bony cylinder. When we recall the fact that the blood is propelled into the coronary arteries, not by the ventricular systole which compresses these arteries throughout their extent, but by the elastic recoil of the aorta, which is synchronus with the ventricular diastole, we can perceive how a rigid inelastic or flaccid aorta must embarrass the circulation in the coronary arteries—the more so when these arteries are extensively obstructed by atheroma. Obstructed arteries circulating poor blood in insufficient quantity, means a softened, flabby heart, many muscular fibres of which have undergone fatty degeneration, manifested by brownish-yellow streaks in the course of the arteries most obstructed.

That a heart having all its muscles softened, and many destroyed by atheromatous degeneration, should become dilated; should become incapable of completely emptying its ventricles; should allow its arteries to become comparatively empty; should allow its veins to become too full, is what, on reflection, we should expect. An artery having its lumen greatly obstructed by endarteritis or atheroma in the presence of fever or sepsis, is liable to have its projecting surface soften and to break down. On this roughened surface the fibrin of the blood is deposited, and gradually complete obstruction of the artery results. This is technically called thrombosis.

Now, in the light of the given pathology, we will consider in part the clinical phenomena of diseases of the nervous system and the heart.

A man, seventy years old, suddenly has an attack of dizziness, weakness, and mental confusion, with perhaps temporary impairment of memory. His expression may be vacant, and he may imagine that he is not at home. There is no paralysis, and little elevation of temperature 99°-100°. The patient may be restored to his usual health in a few weeks. The cause of this attack is probably the rupture of a minute aneurism or a thrombosis of a branch of one of the anterior cerebral arteries located in a frontal lobe, the region of mentality. Cases of this kind are by no means uncommon, and it is important that their gravity should be duly appreciated, as they are prone to be followed by severer attacks. A more frequent form of attack is this. A man sixty-five years old, rather intemperate, is suddenly dizzy, and falls unconscious. When consciousness is regained, it is found that he is partially paralyzed in the right arm and leg. There is, however, only slight elevation of temperature, and he recovers the partial use of his limbs within a few weeks. In this case we infer that a small branch of the middle meningeal artery of the left parital region, the centre of the arm and leg, has become obstructed by a thrombus, or a capillary hemorrhage. The middle meningeal is the direct continuation of the internal carotid artery, and so very liable to be obstructed by the rupture of a minute aneurism. Conceive a thrombus encroaching on the lumen of the arteriole, and on the proximate side of this a minute aneurism, and you will readily understand how a slight increase of tension in the vessel could cause the rupture of the aneurism.

Take another case. A man seventy years old, after a headache of several days' duration, becomes unconscious. On recovery of perception, he is found completely paralyzed on one side; his mind is enfeebled; in time there is a partial recovery from the paralysis, but continuously increasing failure of mentality, probably the result of softening of the brain; and general systematic debility eventually, after perhaps three to twelve months, terminates his earthly existence.

One more cerebral case. A woman about seventy, who, within a year, had arthritic rheumatism with endarteritis, suddenly became completely unconscious. The temperature steadily went up to 104°, and remained there until death on the fourth day. Notwithstanding the suggestion of an embolus from the history, a large hemorrhage better explains the profound paralysis and the rising temperature, the latter pointing to sepsis from the breaking down of the clot. A rising temperature succeeding a cerebral hemorrhage, or the obstruction of a large cerebral artery by a thrombus, indicates a fatal termination.

I recall one case which may be called spinal apoplexy. A middle-aged man having atheromatous arteries was seized with severe pain in the lumbar spinal region. Partial paraplegia resulted. I told the patient that the cause was probably the rupture of a diseased artery within the spinal cord, and that he was liable to an attack of brain paralysis. Unfortunately for the patient, my diagnosis was verified within a few weeks. He had an apoplectic attack from which he never recovered consciousness.

A brief reference to the heart symptoms, associated with a heart that has undergone fatty degeneration, and is wasted, softened, and dilated as the result of disease of the coronary arteries, will end this brochure.

There are two classes of cases that express the failure of the heart to adequately perform its circulatory function. In one class the greatest distress comes from dyspnea. The patient is often unable to take the recumbent position, and can sleep only when raised to an angle of about forty-five degrees. The pulse is small and easily compressed, frequency 80-120, and regular as to rhythm and volume except when troubled by palpitation on overexertion or the formation of gas in the stomach. I believe that in this class the difficult breathing is due to a deficiency of oxygenated blood in the lungs. Very often physical signs do not indicate marked congestion of the lungs. I believe this is because the right ventricle, the weaker of the two, only partially fills the pulmonary arteries, and simultaneously the imperfect emptying of the left ventricle dams back the blood in the pulmonary veins; hence we have in the lungs too little blood in the arteries and too much blood in the veins. However, we may not overlook the fact that the substance of the lungs is nourished by blood derived from the greater circulation having its center in the left heart, whatsoever therefore, deteriorates the quality of the arterial blood must disturb the innervation of the lungs, and thus tend to induce dyspnea. In some of these cases in which dyspnea is so marked, the pulse is very irregular as to frequency, volume, and force. Quite a number of heart-beats are not felt in the radials. The heart acts by jumps and starts, with a pause after 5 to 10 beats. In the second class of cases, dropsy is the most obvious symptom. I think these cases indicate a greater failure of the right ventricle. It throws so small a proportion of its blood into the pulmonary arteries that the right auricle and all the systemic veins are engorged, and the serum of the blood is strained into the tissues. I believe that the reason why dyspnea is often comparatively slight in these cases, is because there is comparatively less blood in the lungs. I omitted to mention the fact that in these cases of degenerated hearts and atheromatous arteries, a deep-seated, severe pain suddenly occurs in the muscles of a limb. I recall two cases. In one the calf of the leg was the part affected; in the other, the sole of the foot. I infer that the pain is caused by the rupture of an aneurism in tissues not easily compressed. Both of these cases died, one within a few weeks, and the other within six months.

Respecting treatment, I have little to say. In the light of the pathology it is easy to see what is desirable, and how little is practicable. Moderate elimination and roborant measures are indicated. In the dropsical cases very little can be accomplished. In the class characterized by dyspnea, digitalis and its congeners, given at first in large doses, carefully assisted by respiratory sedative tonics, such for instance as hydrochlorate of heroin, together with a most careful regulation of the mode of life, including work, exercise, sleep, air, and food, may prolong life for years. When these measures, together with the free use of heart tonics, have apparently little or no effect, I regard the inevitable end as near.

THE HOSPITAL BULLETIN

ST. BARNABAS HOSPITAL

MINNEAPOLIS

A CASE OF PAROVARIAN CYST, CYSTIC OVARIES, AND SALPINGITIS, THE APPENDIX BEING WHOLLY ABSENT

In the Service of Dr. G. C. Barton.

Mrs. L——, aged 23, was referred to me by Dr. F. A. Knights. She was married, had had one child, now four years old, and she thinks she had one miscarriage about one year after the birth of her child.

Family History, good.

Past History—She had had an attack of rheumatism when 14 years old, followed by anemia, from which she readily recovered. About one year ago she was troubled with severe pain in both inguinal regions. She was in bed for two weeks, and the attack was diagnosed as salpingitis by one physician, and by another as appendicitis. Following this seizure her menses were very profuse, and occurred too frequently. At present the flow is irregular and profuse, accompanied by pain in both groins, being more intense, however, in the right side, together with pain in back of neck and head. Her stomach and bowels are in good condition.

At operation a large parovarian cyst was found on the right side, while both ovaries and tubes were cystic. After their removal, investigation for the appendix was made. The cecum and ileum were found without difficulty. There was absolutely no indication of any inflammatory changes either old or new. All the anatomical parts could be readily made out but the only indication of any appendix was a small pouch-like protrusion from the cecum, the appearance of which was perfectly normal.

ATHEROMA OF THE CORONARY ARTERIES, THROMBUS AND DILATATION OF THE HEART

IN THE SERVICE OF DR. C. H. HUNTER

Mr. X——, aged 56 years, lawyer, old soldier, no infectious disease of any kind, except moderately severe attack of la grippe last winter, has used alcohol moderately, was seized while walking home the last days of June, with a violent pain in the chest. He felt faint, and was obliged to stop. After a time he went on, and reached home after suffering two slighter attacks on the way. He was about the next few days feeling well. Saw two physicians who found the physical signs of the heart normal, and also found the urine normal. He complained of some sour stomach, and also of awaking at times with gas and distress in the stomach. After a slight indiscretion of diet on July 4th he had an attack of "feeling faint" with nausea and vomiting.

The patient came under observation for the first time on July 6th with vomiting as the prominent symptom.

The face was pale-yellowish with prominent venous markings; the tongue broad with thin white coat. The immediate symptoms were controlled by calomel, limited diet, and, above all, by hypodermics of morphine. The stools were very foul. The abdomen was slightly distended. There had been no pain in the chest since the first attack of ten days ago. The chest examination is negative. The apex beat can be felt, not pronounced, an inch or so inside the nipple line. The right border is at the right of the sternal edge. The sounds are normal—no murmurs.

The acute gastritis is gradually recovered from during the following week. It might have been thought that this was the extent of the ailment had not a slight dyspnea appeared on exertion. He mentioned for the first time about the tenth day, having had "smothery feelings" in the early morning hours lasting a few seconds the past few nights.

He was kept in bed a few days longer, but the restraint becoming irksome he was allowed to get about cautiously. He expressed himself as feeling well, but weak. The urine has remained normal. A few days at the Lake are passed quietly and comfortably, but the nights are bad—disturbed by dreams and awakenings with dyspnea. A particularly bad attack of gasping for breath, some vomiting, and a bloody sputum brought him to town again. This particular attack at night was after a dose of fifteen drops of digitalis and asafetida at bed time. Dr. J. F. Kennedy saw him in this attack, and noted the following condition: "Cold sweat, great dyspnea, respiration 40; pulse irregular; no râles vomiting; death seemed imminent.

The patient is now put to bed in the hospital with a special nurse, July 23d. There are no abnormal sounds in the lungs. The apex beat can be readily felt in the usual position. The sounds are normal. The pulse is full, strong, and regular, 76 to 84 as it has been through the illness.

In the early morning of the 24th, after a fair night, there was another attack of faintness and dyspnea more alarming than any previously witnessed. A dose of digitalis had been administered the previous evening, in addition to the usual strychnia to obviate the faintness at night.

Dr. Head and Dr. Bell saw the patient several times during this and the next few days.

Dr. Head noted in the afternoon of the 25th as follows:

"No fever, pulse 80, no irregularity, no marked sclerosis, cardiac dullness outside of nipple line. Apex beat not palpable, nor visible; systolic soft bruit heard at apex, and transmitted to axilla; no murmur at base of heart, not dilated to right."

The 2d pulmonary sound was not markedly accentuated. There was dullness, almost flatness, over the bases of both lungs to angle of scapula behind and to fourth rib in front; loss of fremitus over these areas of dullness; lungs over areas of dullness full of fine crackling râles. Later edema of the legs is noted.

The edema of the lungs has come on since the morning visit.

At this time the apex beat is faint, blurred, well outside the nipple line. There is a loud systolic murmur, heard loudest at the apex toward the left. The suspicion that the first attacks were true angina, and that myocarditis is present seemed confirmed by this acute dilatation of the left ventricle. An extra hypodermic of strychnia, nitroglycerine, and morphine speedily brought relief for the time being.

Several leeches were applied to the left side with no particular result. The few doses of digitalis essayed had brought no relief, if indeed they did not bring about the acute dilātation of the heart.

Tr. strophanthus, 5 drops every 4 hours, was substituted. Hot and cold precordial compresses were alternated. Under this and morphine, ⅛-¼, and strychnia hypodermically every 4 hours, and cautious depletion, there was a gradual improvement from this critical condition, the edema, effusion, and the bloody sputa slowly subsiding till the evening of the 28th. Suddenly there is a sense of smothering, a gasping and clutching for air. Fine crepitant râles fill both lungs, and a frothy serous sputum comes up. In a dozen minutes unconsciousness supervenes.

Free venesection is resorted to. Respiration, which had ceased for a moment, is gradually resumed, and becomes less labored. After several minutes of slumber consciousness returns. The incident is not remembered. The pulse has remained regular, and was not perceptibly weakened. The embarrassment of the lungs is slowly relieved. There are a few more days of improvement and comparative calm, when, in the early morning of the 30th, a similar final attack ends the struggle.

The symptoms have been given in detail, as a comparison with the autopsy findings of Dr. Chowning, which are appended, will prove instructive.

The cause of the coronary sclerosis was possibly alcoholic, though the use of spirits is known to have been moderate. There were no signs or history of venereal disease. The disturbed blood-flow would explain the angina. The coronary thrombus would account for the softened heart-wall—infarct rather than myocarditis. The integrity of the heart-wall about the apex and up the posterior wall where the tendiniæ to the posterior leaflet of the mitral are given off was most affected. The regurgitation through the mitral would thus be explained, as there was certainly no dilatation of the mitral orifice or deformity of the valves. This is the contention of Albrecht of Berlin, in his recent book, "Der Herzmuskel." Edema of the lungs would naturally follow for which venesection would be the natural remedy till the softened muscle may recover tone.

POST-MORTEM FINDINGS

DR. W. M. CHOWNING, PATHOLOGIST

Body well nourished; weight about 190; height about 5 feet 9 inches; no scars, or other evidence of injury.

Incision made from sternoclavicular notch to pubes; abdominal wall two and one-half inches thick, and fatty.

PERITONEUM, normal. Peritoneal fluid, normal in quantity and color.

INTESTINES, slightly distended with gas.

SPLEEN, about four times normal size, markedly blue; capsule thickened; pulp red, fairly firm; increased connective-tissue formation apparent.

KIDNEYS, slightly longer than normal, imbedded in much pericapsular fat. Organ smooth; ureter and blood vessels in hilus normal as regards position.

On section the organs are found to be slightly congested, and pyramidal and cortical marking clear. Cortex about normal in thickness.

LIVER, about normal in size, but slightly congested. Pleural cavities contain large quantities of fluid exudate, and clear and of watery consistency.

LEFT LUNG.—At apex is site of an old tubercular lesion, pea-size, and partly calcified. Lungs otherwise normal, except general edema.

PERICARDIAL CAVITY. Pericardium normal; pericardial fluid increased greatly in quantity; fluid is clear and contain no fibrin.

HEART, both ventricles empty; both auricles markedly dilated, particularly the left; left ventricle wall 2 cm. in thickness, pale, flabby. Immediately below the aortic valve in middle cusp, and extending down to within 1 inch of apex, is an area 3 cm. in width by 8 cm. long, quite markedly inflamed.

At the apex in an area about 3 cm. in diameter, the wall is much diminished in thickness, being about 7 mm. Section through this area reveals hemorrhage into the muscle.

The mitral valve is somewhat constricted; admitting with difficulty the ends of two fingers. Right leaflet of aortic valve is markedly thickened; the other leaflets being apparently normal. Aorta, from valves to a point 3 inches above, is the seat of marked atheromatous changes. Right ventricle wall is thin, flabby, and pale. Tricuspid valve somewhat thickened. Left coronary artery was laid open from the aorta to the apex. Throughout this distance the vessel is sclerotic, and in numerous places calcareous plaques are found.

MICROSCOPICAL EXAMINATION

SPLEEN, sclerotic.

KIDNEYS show marked increase of connective tissue and glomeruli somewhat contracted, and in some places contain marked extravasation of blood. Capillaries distended. Cloudy swelling and fatty degeneration present.

LUNG edematous, and section from apex of left lung shows fibroid phthisis.

LIVER, marked cloudy swelling and fatty degeneration, with thickening of the blood-vessel walls.

HEART.—Section through area of inflammation below the semilunar valves shows marked fatty degeneration of muscle substance, fragmentation and brown atrophy, with numerous areas of round-cell infiltration. Section through apex at seat of hemorrhage shows the same, plus marked increase in thickness of vessel walls. Section through a papilla immediately under mitral valve shows normal heart muscle.

SUMMARY.—The heart shows marked chronic myocarditis in left ventricle, with atheroma of aorta and one leaf of semilunar valves, and rupture of left coronnary artery at the apex.

CLINICAL MICROSCOPY

CONDUCTED BY GEORGE DOUGLAS HEAD, M. D.

PERNICIOUS ANEMIA AND ITS RELATIONS TO GASTRIC DIGESTION

In the Journal of the A. M. A., July 16, 1904, Stockton, in a report of 25 cases of pernicious anemia, calls attention to the condition of the gastric digestion. Six cases showed no acidity; one a total acidity of 46; one of 26; and the average, about 10. Four showed the presence of combined chlorides; and three showed free hydrochloric acid in diminished amounts; in all others it was absent. In six lactic acid was present.

Stockton believes that the absence of hydrochloric acid is not an etiological factor in the development of pernicious anemia:

1st. Because with the improvement in the disease there was no appreciable improvement in the gastric digestion.

2nd. Because in a large number of cases of achylia gastrica there was not a single instance in which the blood findings were those of a pernicious anemia.

3d. Because in a few cases where the anemia was marked, the absence of HCl was not complete.

In the discussion upon Stockton's paper Cabot made the remark that in five-sixths of his 150 cases of pernicious anemia hydrochloric acid was absent, and yet digestion went on perfectly. He said: "One is almost inclined to say that hydrochloric acid is a luxury, and not a necessity."

Latent carcinoma of the stomach is sometimes mistaken for pernicious anemia, and one of the findings liable to lead to error is the absence of HCl from the stomach-contents in both diseases. Neither does the blood examination always furnish conclusive evidence, since the secondary anemia of cancer of the stomach occasionally simulates that of pernicious anemia. Such a case occurred in Neusser's wards at Vienna in 1903, Stejskal making the diagnosis of cancer of the stomach, and Turck, the diagnosis of pernicious anemia. At autopsy the diagnosis of the former was correct.

Another misleading point in diagnosis is the presence of lactic acid in the stomach-contents of some cases of pernicious anemia as well as in cases of gastric cancer.

SIGNIFICANCE OF CASTS AND ALBUMEN IN URINE

In an address before the Johns Hopkins Medical Society entitled "The Limitations of Urinary Diagnosis," Richard Cabot gives some valuable facts which are food for reflection on the part of those who place too much reliance upon the urinary findings alone in the diagnosis of renal disease. The history of two cases were submitted by Cabot, one that of an Italian 27 years of age, the diagnosis of whose case lay between yellow fever, cerebrospinal meningitis, and uremia, the urine examination showing 0.5 per cent of albumen and from 10 to 20 granular casts to the field with a Leitz No. 5 objective, and the second that of a patient with an abdominal tumor of obscure origin, the urine showing 0.7 per cent albumen, and numerous waxy and other varieties of casts. At autopsy both cases exhibited, macroscopically and microscopically, normal kidneys.

In going over the records of the Massachusetts Hospital since 1893 Cabot discovered that only 5 cases of acute glomerular nephritis, out of 19 found at post mortem, were recognized during life; 15 out of 17 of chronic glomerular nephritis; and 14 out of 37 of chronic interstitial nephritis.

He refers to F. C. Shattuck's analysis of 1,000 cases of apparently healthy persons over 40 years of age 70 per cent of whom had casts in the urine, and to Dr. Osler's article on the advantage of casts to persons more than 40 years of age.

In his opinion attempts to estimate the quantity of urea and other solids in urine, without an effort to ascertain the patient's general metabolism, are misdirected and of little value.

It seems to the writer that Wm. Welch, in his discussion of Cabot's paper, came much nearer the truth when he said: "The pathologist cannot tell accurately from an examination of the kidneys what the function of these organs has been during life." "We do not know upon what precise anatomical lesions urinary changes, especially albuminuria and the presence of casts, depend, notwithstanding much experimental work." "If we accept the common idea that albuminuria results from some disturbance in the conditions of the walls of the glomerular capillaries, and in that of the glomerular epithelium, and consider that such disturbances may be of a subtle nature, and that the investigation of these structures is difficult, we can understand that, on the one hand, there may be marked lesions of the kidney without albuminuria, and, on the other hand, albuminuria without easily demonstarted structural alterations of the kidney." "Similar statement can be made regarding the occurrence of casts in urine.".

A CASE OF BACTERIURIA RESEMBLING WEIL'S DISEASE

G. Reese Satterlee presents the following summary of this paper: The picture presented by the original case was that of an acute febrile jaundice. There was a severe general infection, which must have caused degenerative changes in the liver as well as in the kidney cells. The prolonged weakness and the general muscular pains during convalescence showed that the infection was a severe general one. Experiments with a bacillus isolated from the urine, showed it to be toxic to guinea-pigs and in a lesser degree to rabbits. Acute hepatitis was marked in all cases that came to autopsy. Acute nephritis was also found. In the animal which survived the inoculation, the urine showed bacteriuria with albumin and casts. —Medical News.

NORTHWESTERN LANCET

A SEMIMONTHLY MEDICAL JOURNAL

The Official Organ of the Hennepin County Medical Society

W. A. JONES, M. D.................EDITOR

Editorial Office, 515 Pillsbury Building

W. L. KLEIN, PUBLISHER

SUBSCRIPTION, $2.00 A YEAR.

839-840 Lumber Exchange....................Minneapolis

AUGUST 15, 1904

A CORDIAL INVITATION

The September meeting of the Hennepin County Medical Society came in Fair week last year, and was attended by many physicians from the country who came to the city to visit the Fair. The September meeting this year will be held Monday evening of the week following the Fair, and no doubt some physicians, who are in our city the preceding week, will remain over, and attend this meeting.

The Lancet is requested to extend to all outside physicians a cordial invitation to attend, not only this particular meeting, but any meeting during the year.

The Hennepin County Society has a membership of over 200, and the attendance is always large and the meetings very interesting.

DISEASES OF THE PANCREAS

The diagnostic pendulum is swinging vigorously over the abdomen again, and is destined to stop midway over the pancreas. Much has been written of late on pancreatic diseases, yet all of the literature is of a clinical description type, neither conclusive nor accurately demonstrative.

The majority of writers agree that the disorders of the pancreas are enshrouded by symptoms that are applicable to diseases of other organs high up in the abdominal cavity. The inability to outline the organ by ordinary methods is discouraging; in fat people it is an impossibility, but in thin abdomens and when gross disease is present the examiner is able to detect the site and seat of the growth. Disorders of the pancreas can be determined in some cases by exclusion of other diseases, dietetic measures, and the adminstration of alkalies. In an exhaustive article on "Chronic pancreatitis," by Dr. Edward Boeckmann, in the St. Paul Medical Journal for July, the author says, "There is no one known pathognomonic symptom of chronic pancreatitis; that the vast majority of cases are not due to gallstones, as is supposed usually, but to an infection of the pancreas through the duodenal opening from duodenal catarrh; it may follow pancreatic calculi, stenosis from ulceration or growth, or it may be due to inflammatory extension from gastric ulcer." He also believes that the presence of indican in the urine is a strongly suggestive, but not conclusive, indication that something is wrong with the pancreas.

During the past few years many of the old-time symptoms classed as indigestion by the physician have been relegated to their proper places, distributed among the more easily recognized diseases, such as appendicitis, gall-bladder diseases, and gastric ulcer. The symptoms formerly grouped under the ill-defined cases of intestinal indigestion must now appear under the more-to-be-recognized form of pancreatitis.

As the diagnosis of chronic pancreatitis must be founded largely on suspicion, it may be reinforced by appropriate treatment. Lazarus, in an article on pancreatic affections in Zeitschrift f. Klinische Medicin, Berlin, and abstracted in the A. M. A. Journal, June 23, says:

"It is possible by dietetic measures to rest the pancreas in case of irritation or inflammation. Meals should be given at long intervals and the physiologic acid stimulus for the pancreas suppressed by the administration of Carlsbad salts, sodium bicarbonate, or magnesia, and the use of milk. When the inflammation has been arrested the indications are to increase the flow of saliva to counteract the results of stagnation and infection and the formation of new calculi. Meals should be nearer together, every three hours, preferably milk as it meets all the requirements. Other factors are calomel, water in abundance, deep-breathing, massage, exercise."

Lazarus further calls attention to the cases of supposed gall-stone colic in a man without icterus, especially in the presence of diabetes or fatty stools, and azoturea are always to be regarded as suggestive cases of pancreolithiasis. Diabetes without colics, but with fatty stools, is also suspicious.

The use of intestinal antiseptics is advocated by many clinicians, and the choice is an individual one. Saline laxatives head the list. The use of pancreatic extract does not receive much attention, but is probably helpful if combined with alkalies—a combination of pancreatin grains, ten to fifteen, with fifteen to thirty grains of bicarbonate of soda, is theoretically good, but the good may come wholly from the soda.

The real issue is in the diagnosis and the diet.

THE STATE FAIR

The State Fair has become an institution that is very close to the interests of every loyal citizen of our state. Its material benefits are unquestioned, but, of necessity, they are in direct proportion to the number of people who attend the fair, and particularly to the number who attend for the purpose of instruction. It is very gratifying to know that Minnesota now has, and for some years has had, the largest and best state fair held in the Union. This year it promises to be better than ever. The attractions of "The Pike" promise to add materially to the amusement features, which are an essential part of all fairs; and we may trust the management that decency will not be transgressed in this feature.

The new emergency hospital will be of interest to physicians, and will be an educative force to the public. The street car service has been greatly improved, and passengers will be landed into the middle of the grounds, instead of two or three blocks to one side.

The agricultural displays will be unsurpassed, and worthy of careful examination and study. With low railroad fares (one-half rate), the country practitioner can well afford to accompany his patients to town, for surely most of them will come. The city physician who takes no interest in a matter of so vital interest to the state, is—a busy man.

NECROLOGICAL

MEMOIR OF THE LATE DR. FRANKLIN STAPLES OF WINONA*

By J. B. McGaughey, M. D.

Dr. Franklin Staples died at his home in Winona, Minn., on February 22, 1904.

He was born in Raymond (now Casco), Cumberland county, Maine, November 9, 1833. He received an academic education, and began the study of medicine in the office of Dr. Charles S. D. Fessenden, of Portland, Maine, in 1855, pursuing his studies in the Portland School for Medical Instruction, Bowdoin Medical College, and the College of Physicians and Surgeons in New York, receiving the degree of M. D. from the last-named college in March, 1862, and in the summer of that year he located in Winona.

He was a charter member of the Minnesota State Medical Society, and was chosen president of the same at its third meeting, his predecessor having held the office two years.

He joined the Southern Minnesota Medical Association at its organization, and was its first president. Though ill health at times prevented his attendance, every meeting was favored with a valued contribution from him. He was prominent in organizing the Winona County Medical Society, and was chosen secretary at its first meeting in April, 1869. He became a member of the American Medical Association in 1871, served as member of the judicial council from 1875 to 1877, and was elected vice-president in 1877. In 1874 he was appointed member of the Minnesota State Board of Health and elected as president of the Board in 1879, and held this office until his death. From 1883 until 1887 he was professor of practical medicine in the Medical Department of the University of Minnesota, when the faculty constituted the State Medical Examining Board. Of late years Dr. Staples gave special attention to sanitation, his contributions in this field being numerous and eminently practical. He served as health officer of the city of Winona for many years, performing the arduous duties of that office in a manner not less creditable to himself than valuable to the community.

---

*Read before the Southern Minnesota Medical Association, at Winona, February 22, 1904.

Dr. Staples, throughout his active life, was an enthusiastic worker, and a conscientious, intelligent, painstaking practitioner. He was free from all taint of modern commercialism, an out-spoken, effective enemy to quackery of every form, and an earnest supporter of all measures having for their object the advancement and welfare of his profession.

Notwithstanding the demands of his vocation, Dr. Staples always took an active interest in public affairs, and performed all the duties of the ideal citizen. He was devoted to the cause of education, and as first superintendent of the city schools, and a member of the board of education, he laid, in the most substantial manner, the foundation upon which the excellent system of schools in the city of Winona has been erected.

The influence of his life and work will long survive him. His memory will ever be cherished by all who knew him, and more especially by those of his own calling, who from intimate acquaintance could not fail to recognize in him a kind friend, a considerate gentleman, an accomplished physician and surgeon, and that highest attainment of creation, a true man.

MEMOIR OF THE LATE DR. STEPHEN W. RANSON OF DODGE CENTER*

By Dr. W. E. Belt, Dodge Center.

The secretary of this society has requested that I prepare and read at this time a brief memoir of the life of the late Dr. Stephen W. Ranson, who departed this life while discharging the duties of his profession near his home, Dodge Center, Minnesota, February 5, 1904.

Considering the fact that I was not personally acquainted with Dr. Ranson, I feel that the secretary has highly honored me by this request, and also my inability to do justice to the subject.

Dr. Ranson was born in Kalamazoo, Mich., May 13, 1843. The first four years of his life were spent in Michigan, and the next nine years in Canada.

In 1856 he came with his parents to Dodge county, Minnesota, where he attended the seminary at Wasioja. He was married on November 21, 1865, to Miss Marv E. Foster, of Olmsted county, they having six children born to them, four of whom are now living.

He commenced his Medical education at Janesville, Wis., continuing the same at the Medical Department of the State University at Ann Arbor, Michigan, finally graduating from the Chicago Medical College in March, 1870. The following month he commenced practice at Dodge Center, where he pursued his labors with unremitting energy to the last moment of his life.

Dr. Ranson is said to have been "the most remarkable personality in this part of the state: of great stature and fine physique," and that "no man has ever been more beloved than he in any community."

I have been told that he always willingly answered all calls, night or day, rain or shine. I dare say it would be difficult to find a duplicate record extending over thirty-three years of medical practice. Dr. Ranson was a member of the Olmsted County Medical Society, the Southern Minnesota Medical Association, the Minnesota State Medical Society and the American Medical Association, and possibly of others.

That Dr. Ranson's skill in his profession must have been commensurate with the demands made upon it, is evident from the fact that he enjoyed a large practice.

He was a large-hearted, public-spirited man, and always an earnest worker in the church and Sunday-school, he having been superintendent of a Sunday-school for over forty years:

Thus ended the life of a man whose example might well be followed by all his professional brothers.

BURNS AND SCALDS

℞ Cocainæ, gr. xv.
Glyceriti boroglycerini, fl. ℥ iv.

M. Sig. Apply locally to relieve pain.—Exchange.

---

*Read before the Southern Minnesota Medical Association at Rochester, August 4, 1904.

NEWS ITEMS

Dr. E. L. Hills, of Warroad, will locate at Roseau.

Dr. Aug. Gronerrud, of Chicago, has located at Hector, Minn.

Dr. E. R. Jellison, of Minneapolis, has located in Taylor's Falls.

Dr. L. F. Curtis, of Illinois, has begun practice at Lesterville, S. D.

Dr. M. S. Jones, of Battle Lake, is a candidate for the state legislature.

Dr. Rulien, of Currie, has sold his practice to Dr. C. C. Walker, of Chatfield.

Dr. J. T. Dunn, a recent graduate of the State University, has located at Wykoff.

Dr. Stanley Clements has moved from Hillsboro, N. D., to Williston in the same state.

Dr. J. Atkinson, a recent graduate of the Iowa Medical College, has located at Spencer, S. D.

Dr. P. J. Weyrens, of Ivanhoe, was married last month to Miss Fannie Hackl, of New Ulm.

Dr. C. T. Ewing, who has practiced for a number of years in Anoka, has located in Wheaton.

Dr. C. M. Shanely, of Lidgerwood, N. D., and Dr. Spottswood, of Hankinson, are in New Orleans.

Dr. T. F. Rodwell, of Cass Lake, has opened a hospital at that place, with accommodations for twenty patients.

Dr. J. W. Preisinger, who graduated from the State University this summer, has began practice at Renville.

Dr. Andrew Henderson, of Merriam Park, has moved to Scanlon, taking the practice of Dr. C. D. Harrington.

Dr. J. H. Lowe, a Homeopathic physician of Slayton, has moved to Pipestone, and will establish a hospital at that place.

Dr. P. H. Bennion, of Windom, has moved to Merriam Park. Dr. Bennion is a graduate of the State University, class of '02.

Dr. C. D. Harrington has returned to Minneapolis to resume practice, and is now located in suite 206 and 207, 620½ Nicollet Ave.

Dr. Hans Johnson, of Willmar, State University, '04, will locate in a new town just located twenty-five miles north of Thief River Falls.

Dr. E. A. Hensel, of Alexandria, has given up St. Luke's Hospital, and established a new one, taking with him the former matron of St. Luke's.

Dr. John C. Koch, who graduated from the State University with the class of '02, and is now practicing at Thief River Falls, will locate at Tenstrike.

Dr. M. A. Stewart, of Omemee, N. D., a recent graduate of the State University, was married last month to Miss Grace Holmes, of Bay Centre, N. D.

Dr. J. G. Vigen, of Fergus Falls, has gone to Europe for post-graduate work. He will spend most of his time in Vienna, in the study of diseases of the stomach, heart, and lungs.

The Northwestern Hospital graduate nurses wish to announce that a bulletin board containing the names and telephone calls of all graduates of the Hospital has been placed in Circler's drug store, in the Pillsbury Building, Minneapolis.

The Devils Lake District Medical Society was organized last month by the physicians in and near Devils Lake, N. D. The officers elected were as follows: President, Dr. H. H. Ruger, Devils Lake; vice-president, Dr. George M. Starkweather; secretary and treasurer, Dr. Thor. Mueller, Devils Lake.

Dr. A. P. Williamson, one of the leading Homeopathic physicians of Minneapolis, who was formerly Dean of the Homeopathic Department of Medicine, of the State University, is going to California to take charge of a hospital at Redlands. Dr. Williams stands high with the regular physicians of Minneapolis, and carries their best wishes to his new field.

FOR SALE

The books and book-cases and the surgical instruments and instrument-case of the late Dr. W. H. Hanscom will be sold at very low prices. Information may be had by writing or calling upon Mrs. W. H. Hanscom, 601 19th Ave. So., Minneapolis.

GOOD OPENING

There is a good opening for a young, unmarried physician in a centrally located office in a growing city of Minnesota. Several good appointments can be transferred. Office furniture, instruments, etc., for sale at $200. For further particulars, address A. R. F., care Northwestern Lancet.

NORTHWESTERN LANCET

A Semimonthly Medical Journal

VOL. XXIV SEPTEMBER 1, 1904 No. 17

THERAPEUTIC FACTS AND PRINCIPLES*

By Christian Johnson, M. D.

WILLMAR

We all know that in times past and even to this day, not only outside of but inside the profession, there has been, and is now, a vast amount of superstition and humbug in therapeutics. Eminent men in our ranks looking continually at this vast amount of humbug have come to the conclusion that all therapeutics is humbug, and often some of those therapeutic nihilists look with a benignant smile on the ordinary physician who, by reason of his situation and circumstances, must go about treating the common people for their every-day ailments with the best means at his command, which, it must be admitted, are at times both uncertain and lacking in utra-scientific precision.

But people still continue to have coughs and colds, and measles and scarlet fever, and typhoid and pneumonia, and hundreds of other minor ailments for which a major surgical operation offers no more hope of relief or cure than a dose of unscientific medicine; and as some people yet prefer doses of medicine, even if it tastes bad, to the knife of the surgeon, the study of therapeutics cannot as yet be entirely left to the druggist and patent-medicine peddler.

Science is simply classified knowledge. Knowledge has for its basis facts; and facts are phenomena that repeated observation, investigation, and ratiocination have demonstrated to be true. Are there, then, it may be asked, as the basis of therapeutics such underlying fundamental facts and principles as will entitle this branch of medicine to be called scientific, or is simply all guesswork, superstition, and error?

The general practitioner, with a number of years in private practice, almost without exception, is a firm believer in the efficacy of drug therapeutics. His experience convinces him that drugs have power to modify and correct the aberrant functions of the human organism. If he is of a philosophical, as well as of a practical, turn of mind he will generalize facts into broad principles, and endeavor to become scientific as well as practical. The following half a dozen propositions will serve as an outline to a rational system of therapeutics:

I. THE SELF PRESERVATIVE POWER OF LIVING ORGANISMS

The most noteworthy fact in modern medical science is the elucidation of the self preservative power of the human organism, the vis medicatrix naturæ of the ancients. This phase of physiology is particularly illustrated by the immunity to variola produced by vaccination; diphtheria antitoxin production by tissues poisoned by diphtheria toxin; inflammatory reaction to local irritants; and general leukocytosis in local infection by the pus cocci, In all cases of disease or infection, unless the dose of the toxin is so large and virulent as to paralyze at once the tissues, there is a reaction of the protoplasm for the protection of the system from the deleterious toxin in question.

The essential symptom complex of any disease is the vital reaction of the system to the cause of the disease. If the cause of the disease, which is usually a definite chemical organic compound circulating in the fluids of the body, is introduced into the system gradually, and the organism is otherwise healthy, the system will, as a rule, limit and overcome the disease in time. Pneumonia, for instance, is an intoxication evoking violent reaction of all the metabolic functions in the body. If previously to the attack the body is healthy, and all the organs in the body can stand the reaction-strains without damage, then the body will neutralize and eliminate the pneumonia toxin within about a week. This is what we understand by the self limitation of disease. The ancients, as I have above stated, recognized and firmly believed in this vis medicatrix naturæ, but it was only after the sciences of chemistry and histology had come into existence that its real nature and modus operandi could be demonstrated. Its due appreciation is absolutely necessary to rational medication.

---

*Read before the Crow River Valley Medical Society, New Paynesville, August 10, 1904.

2. MEDICATION IS TO ASSIST NATURE, TO CORRECT ABERRANT FUNCTION

If principle No. 1, "The self protective power of Nature," is true it follows that very often, if not always, therapeutic measures, whether drugs or hygiene, are simply and solely to aid nature to do its protective work in its battle against disease. Specific medication—that is, medication without regard to symptoms—may be practicable and proper in a very few diseases, yet the vast majority of ailments can only be treated symptomatically. We examine our patient, and find this function and that function out of order. If the essential cause of the disease is one that cannot be removed, or cured, treating him symptomatically will relieve and ameliorate. If the cause is such that nature can, in time, neutralize or eliminate it, symptomatic treatment is curative as much so as any surgical operation for the removal of causes of disease.

3. THE SELECTIVE AFFINITY OF DRUGS FOR THE DIFFERENT TISSUES

Definite knowledge on this subject has been acquired during the last century. Histology, anesthetics, and vivisection experiments were necessary to pharmacological investigation. Noah, indeed some thousands of years ago, demonstrated on his own person that the fermented juice of the grape would make a man dead drunk, and the extract of the poppy was known to the ancients to make a man in pain feel easy and go to sleep, but the modus operandi of these drugs on the body was a mystery. We now know that alcohol, chloroform, and morphine produce their peculiar effects by a special affinity for the cell-protoplasm of the upper regions of the cerebrospinal axis, while strychnine and tetanotoxin, on the other hand, exert their influence on the lower regions, on the motor cells of the cord. Curara paralyzes the termination of the nerves in all voluntary striated muscles, while it leaves the nerve termination in the heart and involuntary muscles unaffected. On the contrary, atropin paralyzes the end plates in the unstriped muscles; while it does not affect the voluntary muscles.

Atropin also arrests all glandular secretions while pilocarpin stimulates them. Again, atropin paralyzes the termination of the inhibitory fibres of the vagus in the heart, producing tachycardia while the termination of the other fibres of the vagus is hardly affected if at all. Aconite, on the other hand, stimulates and benumbs the termination of the sensory nerves and also stimulates the cardiac inhibitory center in de medulla, slowing cardiac action, and at the same time relaxes arterial tension, while digitalis slows the action of the heart by direct action on the protoplasm of the muscular tissue of the heart, and at the same time raises arterial tension. And so I might go through the whole list of materia medica, and give examples of the selective or specific action of drugs and chemicals for the different tissues, and also show that this effect of drugs on the tisues varies greatly with the doses introduced at the time. For example, aconite in poisonous doses kills by paralyzing the muscular tissues of the heart, while in small therapeutic doses it is simply cardiac inhibitory, and in a case of tachycardia, may be called a heart tonic. Strychnine in 1-60 grain doses is a valuable tonic to the protoplasm of the spinal cord, while in 100 times that dose it would practically destroy the motor cells of the cord. But this will be sufficient.

4. BIOLOGICAL CHEMISTRY

The body is a chemical laboratory. In its cavities and fluids ordinary chemical reactions are continually taking place, and many of the diseases of the human body are due to or aggravated by abnormal conditions of the chemical processes there going on. I need not weary you by giving examples of rational chemical therapeusis, but only emphasize that we are here on solid scientific ground.

5. PHYSICS IN THERAPEUTICS

The human body is a part of universal nature and hence exists subject to the laws of nature. Living protaplasm, for instance, exists within a very limited range of temperature, and while the integrity of the nervous system, the circulation and the cutis exists is able to maintain itself against great variation of temperature; heat and cold have nevertheless great influence over vital processes, and have been used from time immemorial for therapeutic purposes. I need only mention the effect on the human system for good and bad of such well recognized agencies, as meteorological climatological, and geographical conditions. We have in these means powerful factors to influence the human system; and of late years light, electricity, and the X-rays have come to the front as almost magical therapeutic agencies.

6. PSYCHOLOGICAL FORCES IN THERAPEUTICS

I shall not dwell long on this point; but the power of mind over mind, and the power of mind over bodily processes are facts too well known to be denied by anybody. Suggestion is a mighty factor in therapeutics, and it may be said that the man who does not possess an optimistic frame of mind cannot make a successful physician. Every physician of experience knows that when a person makes up his mind he is going to die, very little can be done for such a person, and on the other hand a strong determination to live is a great help to overcome disease. Hence one of the most powerful means within reach of the physician is to inspire the patient with hope and confidence. Every physician should have mental control of his patients.

Some such a classification of the underlying fundamental facts of therapeutics has been formulating in my mind for many years past, and to me has been a fairly satisfactory working theory on which to construct what I deem rational treatment of any concrete case in practice. Here I have, for instance, a typical case of lobar pneumonia; how do I then apply these principles? Well, I know that the essential cause of the disease will be neutralized or eliminated inside of a week. I then take an inventory of assets and liabilities in the system of that particular person. Next I examine the vital functions of the body—the nervous, the circulatory, the eliminative, the digestive; and if they are all in fair working order, expectant treatment will do, if not, I prescribe such medication as in my judgment is necessary to correct any serious abnormity. Suppose the case is the usual sthenic type of the man in the prime of life, with a hard bounding pulse, high temperature, dry, hot skin, headache, restlessness and impending delirum, how would I relieve these symptoms? I may do that in several ways. I may bleed such a case, and promptly relieve all disagreeable symptoms, and convert it into a case of comparative mildness. Or I may treat it with aconite and veratrum viride, and accomplish the same thing. These drugs, given in proper doses, will relax the arterial tension, regulate the action of the heart, produce a moist skin, promote the action of the kidneys, relieve the headache, and make the patient feel lots better. Other agents, cold-packs, for instance, will no doubt do the same thing. One physician will employ one of these means better than any of the others, because he has had experience with it, and has learned just how to use it to the best advantage. Another physician will do better with something else for the same reason. There is more than one road to Rome, and though the one that I travel may be a trifle longer than yours, I get there just the same, and know I am getting there because I have been over it time and again before. You go another road, and you get there too, and for the same reason. Now, some say therapeutics is all humbug because doctors don't use the same medicine and treatment for the same disease. It is the laboratory theoretic therapeutic nihilist who talks that way. The truth is that, although physicians differ in their choice of remedies to accomplish the same object, apparently they are both not only right, but strictly scientific as well.

Thus understood and applied I claim that therapeutics is both scientific and practical, and without exception the greatest boon to mankind. Modern surgery with all its brilliancy must still take second rank alongside of therapeutics. Surgery, indeed, removes causes of disease and saves life where drugs are utterly impotent. But imagine for one moment, if you can, what a vale of tears and hell on earth this world would be without anodynes, anesthetics, hypnotics, and the best of the useful drugs that are used daily and hourly to relieve human suffering all over the civilized world! It is the drug that must anesthetize before the surgeon can operate, and it is the drug again, when the surgeon retires baffled, that must conduct the hopeless wreck of humanity pleasantly and safely into his haven of eternal rest. It is great and grand to cure disease and prolong life, but it is still grander to be able to relieve suffering to the living, and guarantee euthanasia to the dying.

We are all subject to painful accidents and diseases, and we must all sooner or later pass into the pains and pangs of mortal dissolution. On these phenomena of human suffering in the past—unrelieved and unrelievable as they then were—the ancient theologian founded his horrible notions about the terrors of hell and damnation hereafter. Medical science, therapeutical science, has happily disproved the horrible fantasies of the theologian. It is not God or the devil that makes man suffer, but some chemical poison in the blood that irritates the protoplasm of the nerve cells of the cerebrum, and therapeutic science teaches us how to neutralize and expel the offending substance, and give rest, peace, and blessing to our human fellow beings. Medical science is the real religion of humanity, and the true physician is the high priest in the temple of nature.

SCIENTIFIC METHODS IN MEDICAL EDUCATION*

By R. O. Beard, M. D.

Professor of Physiology, University of Minnesota

MINNEAPOLIS

Medical education derives its inspiration from the medical profession at large; for, while the teachers of medicine are usually in the vanguard of their calling, the institutions which they serve are rarely so well endowed as to put them out of that bondage to numbers, as a means of financial support, which so frequently paralyzes educational progress. It is, indeed, the self-interest of the profession as a whole which has served as a useful check upon the output of the colleges. The men who have graduated into an already overcrowded calling are always willing to put up the bars for those who follow. The instinct of self-preservation is in this. Beyond it, however, there are always higher motives which serve as the stimuli of medical education. They who know the limitations which their own and other lives have known, are anxious to enlarge the bounds of opportunity for their younger fellows. The higher instinct of paternity extends itself to our professional posterity.

It is well, therefore, that the medical profession should keep closely in touch with the work of the schools. Those of us who have been privileged to engage during the past twenty years in what one of our irreverent members terms "the nefarious business of making doctors," know well the rapid advances which medical education has made. They have become a matter of recent history, not yet wholly written, and yet it is no small part of my present purpose to dwell upon the achievements. It is, rather, my intent to bring to this court of last adjudication—the judgment of the profession—certain of the scientific methods of teaching which medical educators are now seeking to adopt and to secure for them perchance your approval and, if so, your support.

---

*Read before the Minnesota State Medical Association, June 1-3, 1904.

The movement to raise the standard of preliminary fitness to engage in the study of medicine, which has been in the throes of effort for so long, continues. It is being gradually lifted beyond the now common level of a high-school diploma to the inclusion of one, two, or even four years of academic work.

Of conspicuous aid in this movement has been the establishment in some half a dozen leading colleges, the University of Minnesota among them, of a six years' course for medical students. Their example is destined to be followed very soon by all the university medical schools. This six years' course has much to commend it to the profession. It provides a means of securing, to the best advantage, at least two years of academic training, for the first two years of the work are taken in the pursuit of carefully chosen premedical studies, in the colleges of science, literature, and the arts. It thus fulfills a fair measure of preliminary requirements. It lays a well-built foundation for the succeeding work of the strictly medical course. It offers a minimum of higher mathematics, sufficient as an introduction to the study of physics, which it treats in special adaptation to the science of medicine. It requires a knowledge of general botany as an introduction to materia medica; of the general chemistry and qualitative analysis which are thus anticipated in favor of essentially medical chemistry in the later years; of zoölogy and comparative anatomy, which leads up to the study of the human subject; and of English, German, and French as the vehicles of the medical literature of to-day. It shortens materially the period of time within which it has been possible, in the past, for the student to obtain both the baccalaureate and professional degrees, awarding to the completed six years' work the double degrees of bachelor of science and doctor of medicine. It recognizes the very vital principle that the science of histology, embryology, anatomy, medical chemistry, physiology, bacteriology, and pathology should be taught to medical students by medical men and women, and with special reference to the applications of these studies to the science and practice of medicine. That principle puts life back into these fundamental natural sciences, and lifts them, in their influence upon human character and human action, to the level of the humanities of the educational past and the economics of the educational present. So largely does the six years' course fulfill the needs of students of medicine that it will doubtless not be long before it is elected by nearly all candidates for admission wherever it is offered.

An equally new departure in medical teaching is the so-called "concentration system." Harvard University has the credit of the initiation of this method, while Minnesota has been a ready second in her adoption and development of the plan. It has been fully applied to the work of the first two years and in part to that of the third and fourth. It consists in an abandonment of the educational vaudeville in which medical students of the past and of the present, in most colleges, have been compelled to engage, and in the confinement of their attention during each semester or half semester to two or three subjects of study. To illustrate the method: In the first year, the opening semester is occupied with anatomy and histology alone; the second semester with physiology, chemistry and materia medica. In the second year, physiology, chemistry and therapeutics are taken in the first semester; anatomy and histology in the first half of the second semester; and bacteriology and pathology in the second half. In a word, the student concentrates himself upon a minimum number of subjects at one time, and is spared much of the mental gymnastics he has hitherto performed and much of the diffusion of energy resultant therefrom. The concentration method has been in operation for two years in the College of Medicine and Surgery of the University of Minnesota with the most admirable results.

So marked has been the educational progress incident to the development of laboratory methods of study in the sciences fundamental to medicine, and so evident have been the benefits arising from the more individual training which those methods afford, that the application of similar methods to clinical teaching is commending itself forcibly to medical educators. The most signal ability upon the part of a clinical teacher cannot make the conduct of a clinic en masse a scientific process. Whether on the medical or on the surgical side numbers in attendance upon a case are a bar to successful teaching. The amphitheatre clinic is spectacular, but it is not educational. It affords an opportunity of eclat to the clinician, but very small benefit to his pupils.

A clinic to be of real value to the student should proceed along the lines of actual practice upon his part. It should follow the case method from beginning to end. It should afford the student the supervised opportunity of personal examination of the patient, of a carefully reviewed diagnosis and prognosis, of preparing and completing the case history, of making urinary analysis, blood studies, etc., of observing the details of preparation for operation, of viewing operative procedures at close hand, and of following the results of treatment and the course of convalescence. One case so studied is worth more than the witness of a dozen brilliant operations or the dictum of the clinician upon a score of selected patients. In short, the clinic should be a continuous one, and the student's work should be individual and directly responsible to the instructor.

All this means clinical organization upon a scientific basis. It means the division of classes into very small sections, the arrangement of required work to required results, the multiplication and compensation of clinical instructors acting in the service of clinical chiefs, the equipment of laboratories for purposes of clinical diagnosis. It means, in brief, as it should mean, the development of the clinical arm of medical education to a place correlative with that of the laboratory arm.

The tendency to specialism which has been so marked a feature of medical practice in the past two decades, to whatsoever course it may be traced, has had its effect, for good or ill, upon medical education. Men, like lines of force, move in the direction of least resistance, and the easy road to a competence may have been one with the channel in which the current of specialism has run. As a consequence of the dominance of specialism in practice, the specialties have risen to prominence in the curriculum of medicine. It may well be questioned whether this result has been an answer to the need of the student specialist or to the desire of the specialist himself for an announcement and a clientele. Be that as it may, an adjustment of the relationship of the special to the general branches in medical teaching is a recognized necessity. These special branches tend to multiply as new therapeutic measures are discovered, and their place in medical education is an established one. As a method of readjustment, the elective system, which has served the purposes of higher education in general so well, is in process of application to the medical course. Naturally introduced first into the senior year, it is being extended to the third year's work as well. A choice of a certain number of these electives is required, and that choice carries with it the obligation to the successful pursuit of the subjects chosen. An elective chosen has, or should have, the same value as a compulsory study. Experience has already shown that the fact of choice guarantees the peculiar interest of the student and predicates his success. Frequently, other electives than those of required choice are voluntarily pursued.

Well supplied as the professional market is with specialists of many sorts, there is one field in which specialism, as a matter both of teaching and practice, should be carried to a more distinct development than it has yet attained and that is the field of surgery. So rapid have been the advances and so great have been the temptation to brilliant achievement and large earnings in this field, that it has been invaded by a great army of operators who are not surgeons. To the younger men of the profession this allurement has been peculiarly strong, and many a tyro of hardihood has rushed in where the angel of experience would fear to tread. Fortunately for its own protection, unfortunately for the credit of the profession, the public is growing as fearsome of the ready and familiar knife of the modern operator as it was of the slow, reluctant, and stranger instrument of his fathers. Medical educators and examining boards alike should meet this occasion by imposing more rigid requirements in the study of surgery and, by providing, as in Great Britain, for special tests of fitness of the would-be practitioner of surgery. There is no field in medical practice which should be so sharply specialized as that of the surgeon.

The rapid development of medical science and the growing need for the application of laboratory methods to clinical service, are making a demand for the training and recognition in practice of a class of men and women who may be distinguished, not as specialists, but as medical scientists—a class of experts in laboratory methods who shall do for the profession at large a recognized and paid service which it cannot, either in point of time or in point of fitness, do for itself. While the rapid advances which medical education has made and is still making will eventually equalize the opportunities of scientific training for the profession, as a whole, it must always remain true, in the practice of the medicine of the future, that there is room and service for the scientific medical counsellor as for the general medical practitioner.

PROGNOSIS AND TREATMENT OF CHRONIC MYOCARDITIS*

By J. W. Bell, M. D.

Professor of Physical Diagnosis and Clinical Medicine, University of Minnesota

MINNEAPOLIS

Chronic myocarditis is a disease insidious in its onset, latent in its evolution, and erratic in its clinical course, causing sooner or later the death of the patient.

PROGNOSIS

The prognosis in a given case, as to duration of life, will depend on the cause of the disease, and the state of the heart muscle, influenced favorably or unfavorably by the age, habits, temperament, and general nutrition of the patient. The question of the probable duration of the disease, equivalent in this instance to the duration of life, is one the medical attendant is in every case obliged to answer or attempt to answer. While the disease is progressive in its course, and invariably fatal, much may be accomplished by judicious management to prolong life and defer the evil day.

In forming a prognosis the following facts should be carefully considered: age, habits, temperament, general nutrition, condition of the vessels, kidneys, and heart, especially the condition of the latter as indicated by the location, extent, and character of the palpable impulse, area of deep cardiac dullness, and character of heart sounds. We should also carefully consider the condition of the pulse, presence and extent of dropsy, frequency and severity of attacks of palpitation and dyspnea, presence of precordial distress, and, lastly, evidence of interference with the blood supply to the heart as indicated by one or more attacks of angina pectoris.

The younger the patient the more exemplary his habits, and the better his general nutrition, the more favorable the prognosis; on the other hand, the farther the individual is beyond the equator of life, the more questionable his habits, and the more faulty his digestive system, the more unfavorable the prognosis. As long as the heart muscle receives sufficient nourishment it remains in position to continue the unequal contest, but the moment its blood supply is impaired through coronary disease, that moment life becomes uncertain. Briefly, prognosis depends upon the relation existing between the demands made upon the heart and its ability to meet them; hence it is largely a question of myocardial nutrition.

---

*Read before the Minnesota State Medical Association, June 1-3, 1904.

TREATMENT

For the purpose of treatment we divide the clinical course of the disease into two periods or stages: (1) the period of progressive and often slow development of myocardial weakness, accompanied by breathlessness, precordial distress, irregular pulse, and occasional attacks of palpitation, and (2) the period of advanced myocardial weakness, accompanied by symptoms of pronounced cardiac insufficiency, such as constant precordial distress, dyspnea, cardiac asthma, Cheyne-Stokes breathing, frequent attacks of palpitation, marked irregularity of pulse, angina, tachycardia, bradycardia, Stokes-Adams quartet of symptoms, and later all the symptoms of general venous engorgement.

Each individual case must be carefully studied as regards the existence of any constitutional vice, the exact state of the heart and arteries, the character of the pulse, and the digestive powers. Having then a clear conception of the patient's condition it should be carefully and frankly explained to him, unless there be some special reason to the contrary, when it should be explained to a friend or relative.

If called to treat a case in the first period or stage our first endeavor should be to discover and remove every possible cause of cardiac irritation and embarrassment. Our second endeavor should be to so regulate the diet, exercise, and habits of the individual as to bring the general nutrition, as well as that of the heart muscle, up to the highest point, and to maintain it. For this purpose, in addition to hygienic and dietetic measures, general tonic treatment, consisting, according to indications, of strychnia, arsenic, and iron, is indicated. The question of exercise must be carefully considered in relation to each individual case, and with special reference to the condition of the myocardium. In early cases where the pathologic changes are not far advanced, especially in obese persons where fatty infiltration, rather than degeneration, is the rule, graduated exercise is especially beneficial. However, in the large majority of cases of chronic myocarditis absolute rest in the recumbent position will be found necessary for a few weeks at least. The patient's habits should be carefully regulated; tobacco, alcohol, coffee, and tea should be interdicted. He should be urged to lead a quiet, orderly, and temperate life, as free from worry and excitement as is compatible with our modern civilization. The diet must be adapted to the digestive powers and the wants of the system. All rich, bulky foods, especially those inclined to induce flatulence, should be excluded. The patient should be advised to sleep and eat regularly, using three meals daily, composed of concentrated, non-fermentative, nutritious food suited to the requirements of his special case; the midday meal should always be the principal one; no solid food between meals; little or no fluid with meals. Patients should be urged to sleep at least ten hours out of every twenty-four, with a midday rest of at least one or two hours following the midday meal, in order to minimize the daily labor of the heart, the latter injunction should be rigidly followed the remainder of the patient's life. It is attention to the little things of eating, sleeping, drinking, and doing that makes success possible in dealing with this condition.

In order to intelligently advise and treat an individual suffering from chronic myocarditis, we must inquire carefully into his heredity, as well as his past and present condition, also have clearly in mind the etiological factors responsible for the varied pathologic changes present in chronic myocarditis. The fat, flabby man of sedentary habits suffering from fatty infiltration of the heart must, of necessity, receive different advice and treatment from that indicated in the thin, spare, ill-nourished individual. In the management of myocardial insufficiency we rely largely on rest, graduated exercise, massage, resisted movements, saline carbonated baths, tonics, and saline cathartics. In suitable cases saline baths of a proper temperature aid very materially in restoring myocardial tone.

Before instituting a course of baths, advanced arterial fibrosis and aneurism must be excluded, also advanced cardiac insufficiency with dropsy. It is well to begin with a bath of ten minutes duration, the bath to consist of fifty gallons of water at a temperature of 98° gradually lowered to 94°. The water should contain 1 per cent of sodium chloride and 0.1 per cent of calcium chloride. The temperature of the second bath is gradually lowered to 88°, and thereafter all baths should be given at that temperature. The percentage of chlorides should be gradually increased, sodium to 3 per cent and calcium to 1 per cent, and the bath prolonged to twenty minutes. As a rule, carbonic acid should be added to the bath by the tenth day. The baths, if beneficial, should render the pulse slower, fuller, and more regular; improve the character of the impulse; and decrease the area of deep cardiac dullness.

The course of baths should extend over a period of five or six weeks, omitting the bath every fourth day. The principle underlying the baths is that the percentage of salines be increased, temperature lowered, and duration lengthened. I consider it safer, and equally beneficial, to follow the plan suggested above, of gradually lowering the temperature of the water during the first few baths until the patient becomes accustomed to the cool bath.

Unfortunately, these patients do not present themselves for treatment until pronounced weakening of the myocardium has occurred, as shown by marked venous and visceral congestion, indicating the second or advanced stage of the disease. We are then confronted with the problem of medicating a weak and degenerated heart muscle in an individual having, by virtue of his age, in the majority of cases, suffered certain vascular, as well as extravascular, changes, causing increased intra-arterial and cardiac blood pressure. In advanced cases absolute rest in bed must be enjoined for a variable period, the length of time depending entirely on the indications present in that particular case. The question of the amount of rest indicated or required in a given case of myocardial insufficiency, demands the most careful consideration on the part of the physician, in order to avert disaster.

The treatment of advanced cases of myocardial insufficiency, associated with pronounced venous and visceral engorgement, with evidence of beginning anasarca, is wholly palliative, directed to the relief of symptoms and associated complications. For the relief of the more or less constant high arterial tension present in many cases we rely mainly on the iodids and nitrites. I have found the iodid of sodium in from three to five grain doses, three or four times daily, the most satisfactory agent in dilating the arterioles, thus reducing intra-arterial pressure. The action of the iodids is much more prolonged than the nitrites, hence the iodids are to be preferred.

Strychnia, digitalis, strophanthus, spartein, and caffein render most excellent service in giving tone to the weakened heart muscle, when combined with a vasodilator, like soda iodid, nitroglycerin, erythol, or sodium nitrite.

I desire to emphasize the value of long-continued, very small doses of digitalis, combined with a vasodilator, in myocardial disease associated with arterial fibrosis or chonic renal disease. In case the stomach is irritable, the urine scanty, and the arterial tension low, it may be given with good results by the rectum. The morning saline, preferably magnesia sulphate, given one hour before breakfast, aided by an occasional bedtime dose of calomel, adds much to the comfort of the patient, and aids greatly in delaying the evil presence of pronounced venous engorgement and anasarca.

In case angina pectoris occurs the attack should be met promptly by the inhalation of amyl nitrite and the subcutaneous use of morphia and nitroglycerin. In view of the intense suffering associated with angina, the attendant should instruct the nurse, in case of an attack, to immediately administer a generous dose of morphia and nitroglycerin subcutaneously.

In the management of pronounced myocardial insufficiency, with its attendant evils, no method of medication has proved so satisfactory in my hands as that of subcutaneous medication, assisted by rest, massage, baths, and saline cathartics. Our resources are sorely tried in the treatment of this disease, a veritable struggle with mortality, often extending over a period of years, for it should be constantly borne in mind that we are dealing with an incurable condition.

In conclusion, I desire to emphasize the necessity for prompt recognition of the early symptoms of myocardial weakness, believing that no practitioner is justified in ignoring or passing as unworthy of therapeutic attention the breathlessness, precordial distress, and iregular pulse so frequently encountered after midlife.

THE HOSPITAL BULLETIN

NORTHWESTERN HOSPITAL

MINNEAPOLIS

PRIMARY SARCOMA OF THE BRAIN

In the Service of Dr. Lester W. Day

H. M——, male, aged 23.

In February, 1904, patient came in complaining of numbness in right hand and arm. Shortly before this he had been laid up with an attack of la grippe, for which he was treated by Dr. Chowning. Examination revealed nothing. He had been looking badly for a year, thin, pale and easily tired. Suspecting tuberculosis I examined his chest but could not put my finger upon anything definite to prove it.

His personal and family history were negative other than that he came of very neurotic stock. He had no bad habits. Occupation, traveling salesman. Denies venereal diseases.

May 6th.—He walked into my office with marked ataxic gait leaning upon a cane and assisted by a friend. In shaking hands with him he gave me his forearm instead of his hand. He told me that since seeing me last he had always been more or less conscious of numbness in right side.

One week previous he noticed some difficulty in writing. This rapidly grew worse so that on May 4th his writing became illegible.

Examination May 6th showed his mind bright and clear, facial expression intelligent, eyes normal contracting to light and during accommodation. Eye muscles normal. Tongue protuded in middle line. Muscles of right arm and leg as strong as those of left. Marked ataxia in both right arm and right leg. Sensation on entire right side markedly impaired. Could not feel head of pin, but could feel the point under a fairly vigorous pinch, but could not localize it. Sensation of face impaired, though not so much as in limbs. Sensation of back and trunk on right side also impaired. Could not distinguish between heat and cold. Taste somewhat impaired. Hearing seemed deficient in right ear. Tendon reflexes present and even slightly exaggerated on both sides, also marked ankle-clonus on right side. Muscular reflexes present. Temperature 100°; pulse 94. Patient was sent to Northwestern Hospital. When seen the same evening he was bright and full of fun.

May 7th.—Patient somewhat aphasic; there is loss of power in right arm and leg. Temp. 98.8°; pulse 72. Had a good night. At 4 p. m. temperature 98.6°; pulse 60. Leucocyte count, 12,000.

May 8th.—Had a good night. Did not wish any breakfast. 7 a. m. temperature 98.4°; pulse 98. 5 p. m. temperature 98.6°; pulse 72. Refused supper, and found it very hard to speak. 8 p. m. paralysis of right arm and face. Pupils both contracted, but right side more slowly than left. Aphasia very marked. Vomited.

May 9th.—Vomited three times since my last visit. Sleep unbroken. Complained of severe headache. 9 a. m. temperature 98°; pulse 60. Is very drowsy; had to be catheterized. Urine showed trace of albumin; no casts.

Examination of eye grounds revealed neither choked disks nor optic neuritis. Vomited frequently. Is no longer able to speak; pulse 60. After consultation with Drs. T. S. Roberts, W. A. Jones and Gustav Schwyzer we decided to operate. Dr. Schwyzer operated under cocaine anesthesia locally administered. A window was removed over the fissure of Rolando on the left side. Nothing was revealed save what appeared to be a single tiny tubercle. The meninges were not congested. There was a marked tendency for the brain to protrude through the opening. The opening was carried forward, but nothing was discovered. The brain was then needled and aspirated, but nothing found.

Note.—Leucocyte count just previous to operation 20,000 whites. Patient returned to bed 3 p. m.; pulse 60; temperature 99°; in apparently as good condition as before operation. At 11 p. m. pulse 66; temperature 99.8°. Has vomited twice.

May 10th.—Slept considerable during night and at 5 a. m. nurse reports patient brighter. 9 a. m. paralysis of right leg. Is very restless, and requires a restraining sheet. Pulse 60; temperature 99.4°. Nutritive enemas.

May 11th.—3 a. m. pulse 48; temperature 99.4°. 4 p. m. pulse 60; temperature, 100°. Obstreperous.

From now on he gradually sank, sometimes irritable, again drowsy. Pulse irregular, jumping from 54 to 128 apparently without cause. Temperature gradually went up until death, reaching 104.8° on May 17th. 1:30 a. m.

Postmortem 10 a. m. May 17th

Drs. Chowning and Day

Mr. Miller, aged 23. Height 5 feet 10 inches; emaciated; rigor-mortis is marked. Incision in scalp on right side over fissure of Rolando.

Peritoneal Cavity.—Peritoneum normal. Abdominal organs exceedingly dry. Spleen normal. Right kidney capsule strips with some difficulty; normal in size; on section lower pole moderately infected, other portions less so. Pyramidal markings distinct; cortex normal in thickness. Left kidney pericapsular fat rather abundant; capsule strips with some difficulty; stellate veins are injected.

Pleural Cavity.—Right, dry and free from adhesions; left, dry, and free from adhesions. Pericardium, normal; right heart, normal. Left heart empty, muscle normal in thickness, rather light colored; aortic valve, normal. Aorta shows beginning atheroma. Right lung, localized tuberculosis at apex. Hypostatic congestion of lower lobe. Peribronchial lymph glands palpable; lung otherwise normal.

Left lung apparently normal thoughout. Liver normal in size; dark, irregular in color. Right adrenal, flat, hard on section; central portion is dark-brown and hard. Left adrenal, same condition approximately as right. Pancreas, normal in size, apparently normal on section. Brain, egg-shaped tumor; long diameter, about 2½ inches; short, 1½ inches, situated behind posterior horn of the internal capsule, and verging upon the floor of lower cornu of the left lateral ventricle.

Upon microscopic examination this proved to be a large round-celled sarcoma.

ST. BARNABAS HOSPITAL

MINNEAPOLIS

CYSTIC KIDNEY—SEVERE HEMORRHAGE ON REMOVAL

In The Service of Dr. G. G. Eitel

Mr. G——, aged 35, entered the hospital June 30, 1904. He is a farmer, and weighs 124 lb. He complained of a tumor in the abdomen, and pain in the left hypochondrial region. His family history was unimportant.

Past History.—Well until six years ago, when he was operated upon for "bladder trouble." One year later both testicles were removed for tuberculosis.

Present History.—Six weeks ago he first noticed a mass about two inches below the border of the right ribs. He was troubled with constant nausea, and a foul taste in the mouth, together with considerable pain in the left hypochondrial region, which was always relieved by vomiting. He had frequent micturition.

Examination showed albumin and casts in the urine.

The diagnosis was not clear, and lay between trouble with the gall-bladder and the kidney. Hence an incision was made to the right of the umbilicus. The gall-bladder was found to be normal, and the tumor proved to be a large cystic kidney surrounded by adhesions. In the pelvis of the kidney were many sandy concretions. The cysts were filled with serum and a milky fluid, which had coagulated in part.

The kidney was ligated with catgut, but the renal vein pulled away from the stump. The hemorrhage was very severe before it could be controlled, owing to the deep position of the stump, and the patient was very nearly pulseless when put to bed, the vessels having been clamped and the cavity packed with gauze. During the operation about four liters of normal salt solution were injected subcutaneously, and hypodermoclysis was continued at intervals for the following twenty-four hours. The patient responded with great rapidity. Two weeks later the wound was closed under cocaine, and the patient has made an uneventful recovery.

GALL-STONES WITH EMPYEMA OF GALL-BLADDER

In the Service of Drs. Franklyn Wright and W. D. Shelden

Mrs. M——, aged 62, widow.

Father died of typhoid fever; mother died of apoplexy. The mother suffered from many attacks of gall-stone colic, often associated with jaundice. One brother died of consumption; one sister of rheumatism, one sister and two brothers of hernia.

The patient had measles, scarlet fever, and whooping cough during childhood. She has not had typhoid fever.

She has had six children, and several abortions. Pelvic inflammations were entirely absent. The history of gall-stones began 33 years ago with an attack of colic followed by jaundice. Since then she has had many attacks, they were almost constantly accompanied by eructations of gas and indigestion, yet since her first attack jaundice has never been present. Of late years the interval between attacks has gradually lengthened; her last attack was two years ago.

Present illness began in February with distress in abdomen, indigestion, poor appetite, and nervousness. The location of her distress was variable, sometimes in the epigastrium or about the umbilicus or in the pelvis. Often she could give no particular location. At times there is slight tenderness in the epigastrium. During the month of April she complained of severe pain in the pelvis and sacrum. Vaginal and rectal examination proved negative, except for tenderness over the neck of the bladder. A cystoscopic examination of the bladder by Dr. Wright proved negative.

About the same period she experienced occasionally pain in the precordia with dyspnea.

After a period of comparative comfort for several weeks she was taken on July 24 with severe pain in the epigastrium and vomiting. The attack lasted for about two days.

August 2d she had a chill followed by a temperature of 102°; pain in abdomen and sore throat. The region of the gall-bladder became tender, and there was pain in deep breathing. No friction rubs were heard.

August 4 the gall-bladder became palpable. Her pain and temperature continued until the operation. Physical examination up to this time had been entirely negative. There was no jaundice and no fever. The urine was normal. Repeated examination of gall-bladder region showed no tumor or tenderness. The patient has lost considerable weight.

August 13 the abdomen was opened by Dr. Wright. The gall-bladder distended and attached to the omentum, transverse colon, stomach and liver by vascular adhesions. It was drained of about two ounces of thick grayish pus and numerous dark-colored gall-stones.

On account of the patient's age and her debilitated condition anxiety as to her recovery was well founded, for on the second and third days following the operation she weakened markedly. Her pulse ranged from 130 to 150. Tympanites was troublesome, vigorous use of stimulation and repeated hypodermoclysis gradually improved her condition. She has made a slow but satisfactory recovery.

A VIEW OF CALOMEL 60 YEARS AGO

Perreira, in his Therapeutics, published in 1846, in speaking of the physiological action of calomel, observes:

"Of late years, however, immense quantities of calomel have been administered medicinally without producing any symptoms of irritant poisoning. Nay, apparently with the opposite effect, for we have the concurrent testimony of many practitioners that in yellow fever, cholera, and other dangerous diseases, calomel, in doses of from twenty grains upward, allays vomiting and purging, and on that account has been denominated a sedative. So that in small doses, two to five grains, calomel is almost invariably admitted to be irritant to the bowels, it is asserted that larger ones are actually sedative. These statements appear to me almost inconsistent, and yet they are fair deductions from the experience of numerous intelligent practitioners."

NORTHWESTERN LANCET
A SEMIMONTHLY MEDICAL JOURNAL
The Official Organ of the Hennepin County Medical Society
W. A. JONES, M. D..................EDITOR
Editorial Office, 515 Pillsbury Building
W. L. KLEIN, PUBLISHER

SUBSCRIPTION, $2.00 A YEAR.

839-840 Lumber Exchange...................Minneapolis

SEPTEMBER 1, 1904

THE SURGICAL TREATMENT OF OBSTETRICAL PARALYSIS

Dr. Royal Whitman, in the August number of the Journal of Mental and Nervous Diseases, divides obstetrical paralysis into three classes:

1. Those cases seen soon after birth, in which the paralysis may be combined with other, and, what is often considered more serious injury, such as fracture.
2. The cases brought for treatment during the latter part of the first year when it has become apparent that complete recovery is doubtful.
3. The cases seen in childhood and adolescence when treatment is sought in the hope that the diseased arm may be made more useful.

In the first class there is often sensitiveness to pressure or movement of the arm. The paralysis is either typical or widespread.

After the first year, the second class, the paralysis is usually well marked and more clearly defined. The parents, as a rule, do not inspect the paralysed member with care, or, hoping the disability will clear away, they pay but little attention to it. This is particularly evident among the poorer classes who have large families. Too often, also, the attending physician assures the observant and anxious mother that the paralysis will soon disappear even though it is due to malposition or injury from the application of forceps. The result of this neglect is, the child grows up with luxations from paralysis of the deltoid or the flexor or supinator muscles.

Atrophy and shortening of the limb is inevitable, and the prospects for improvement are reduced to the minimum.

In the first class of cases rest of the limb in the proper position is imperative, to prevent weakening of the opposed muscles. The arm should be fixed to the chest, and the fingers extended. Until the local sensitiveness has subsided gentle massage and gentle movements should be limited to the forearm; later the same methods may be extended to the shoulder. The position of the limb, however, cannot be too strongly emphasized. Failure to attend to this important factor is responsible for subsequent paralysis and atrophy.

The treatment should be continued faithfully and persistently and with attention to details until all traces of paralysis have disappeared even though a year may be required.

In some of the cases in spite of the most skillful care, secondary distortions may occur; and yet deformities of long standing with contractions may be overcome, and with outstretched muscles relaxed, the gain and repair is remarkable. One must remember the possibilities of the nervous system, and even the cases classed as hopeless may improve or recover with but little reduction in power and movements.

Subluxation of the humerus downward and backward from obstetrical paralysis is frequently classed as congenital, when, in reality, it is wholly acquired, and hence amenable to treatment.

Whitman treats these cases similarly to the reduction of congenital dislocation of the hip,—by the bloodless method and fixes the limb in plaster for a number of weeks or months, in order to permit the accommodation changes in the tissues about the joint. After the plaster is removed the movements of the arm may be carried on forcefully.

The patients who are treated in this manner are capable of marked improvement in spite of the apparently hopeless condition of the joints and muscles.

No one should consider tendon transplantation until after sufficient time has been given for the reduction of the deformity and the education of the disabled apparatus. In case of failure transplantations may be tried. This will be wholly experimental and in all probability a total failure.

OPENING OF THE MEDICAL SCHOOLS

The month of September is marked in medical circles by the opening of the fall term in the medical schools. Minnesota Universities begin their work early and continue until nearly the first part of June, a long, hard year for students and instructors. The College of Medicine and Surgery of the University of Minnesota opens September 1st, and Hamline opens September 20th.

The Journal of A. M. A., for August 13th, devotes most of its pages to medical college news, papers by leading men who teach in medical schools, and a descriptive account of many of the medical courses of instruction in various states.

The medical student of to-day is so far in advance of the student of twenty years ago that comparisons are needless. The methods of education in all departments have been changed and improved by consultations among the heads of the universities and its departments until now there is greater uniformity in instruction, less commercialism, and a greater attempt to elevate in every way the student and the science.

The tendency to increase clinical and laboratory facilities at the expense of didactic work has been an absorbing topic for discussion. Some of the schools hope to do away with much of the didactic work, while others maintain that lectures must form an important phase of instruction. In the smaller cities where clinical material is not abundant, the hours must be occupied by the student in study in some form. As yet no method has been devised to take the place of lectures. They have a distinct and decided influence upon the student body, and could not be discontinued profitably; of course, much depends upon the lecturer. He should be a trained teacher, himself a graduate in methods of teaching. His influence and his manner of imparting instruction are productive of greater good than is possible with the man who has no special training. Such a man was the late Dr. J. H. Dunn. Trained to teach in his early days, he knew how to impart his knowledge gained by reading and personal experience. His lectures were clear and pointed, and the student carried away with him an excellent understanding of the subject. The instructor who is untrained works at a disadvantage: he labors to prepare his lectures, but is unable to give the student what he really needs.

The necessity for closer intimacy between the lecturer and the student has brought about the quiz system, which is a valuable method of instruction. The benefits of the quiz depend again upon the qualifications of the master and the character of the student.

Dr. Joseph McFarland, in a paper in the issue of the Journal referred to above, on "The Value of Conversational Method of Medical Instruction," advocates the "Student's" conference—a form of quizzing carried on in an informal way. A student is asked a question, or the student reverses the order and asks a question himself. The topic is thoroughly discussed until the examiner is satisfied. If the student is in error an opportunity is given to others to explain or correct the mistake. In such spirit and without formality, the student learns more than by promiscuous reading or from abstruse lectures. This method has been adopted by many instructors, but not to the extent it should be. An instructor who attempts to teach too much, or who discourages an intimacy between himself and the students, is of little value as a teacher. Such a man should confine himself to clinical or laboratory methods. Students should be encouraged to ask questions relative to the subject at any time, even if the lecturer is interrupted in his lecture or clinic.

Ridicule has no place in medical work. The embarrassment of the pupil must be broken down by closer and more intimate personal conference with the teacher. The man who has no time to explain a worthy point is not an instructor, and he occupies a false place in a faculty.

ATHEROMA AND ARTERIOSCLEROSIS

A symposium on arteriosclerosis by famous authorities was one of the interesting events at the Atlantic City meeting of the A. M. A.

The subject is one of exceeding interest to the specialist, as well as to the general practitioner. The discussion of the symposium showed a laxness concerning the terms atheroma and arteriosclerosis. The words were used interchangeably, and some of the speakers who discussed the papers did not recognize a distinction between the two forms of disease.

Jasué, in the Presse Medicale, points out that atheroma is really a degenerative process, while arteriosclerosis is an inflammatory one. The two diseases may coexist with no definite connection between the two conditions. The cause of the one may bring about the other, namely, anything which produces increased arterial tension. Autointoxication and too great activity of the suprarenal capsules may be possible factors in atheroma, but the individual must belong to the degenerative class.

The etiology of arteriosclerosis is not a very extensive one. Infectious and constitutional diseases are important factors. Mental and physical strain, and the resultant hypertension, are most frequent causes. The ingestion of foods which disturb the nutritive equilibrium are recognized causes. Alcoholism is not such an alarming factor according to Cabot as has generally been supposed.

This author stated that from his post-mortem investigations the alcholic origin of arteriosclerosis was a myth. These investigations were confined strictly to the alcoholic, and did not embrace those who suffered from syphilis and rheumatism.

The effects of arteriosclerosis are far-reaching, and are unusually associated with diseases of the heart and kidneys, hence it is often difficult to disassociate the two conditions or to demonstrate with certainty cause and effect.

Each case must be studied closely to differentiate between atheroma and sclerosis: the patient, his occupation, manner of living, his strains, and his diseases.

The treatment of arteriosclerosis is very important. The removal of toxic causes, the establishment of a proper diet, and sufficient rest or change in occupation to restore or improve the arterial balance. The use of iodids and nitroglycerine is so common as to require but little comment. Medicine, in whatever form, is secondary to general care and instruction.

"CHIROPRACTIC"

The Lancet has several times spoken of the new "science" of medicine, which seems to have started up a flourishing career up in the wilds of St. Louis county; but hitherto we have not known much about its doctrine or practice. The Glencoe Enterprise seems to have come into touch with it, and therefore we give its near-by view of the new fad. It says:

P. W. Hammerle, who until recently was engaged in cultivating a farm near Glencoe, has within the past few months changed his vocation entirely and is now, and for the past two months has been engaged in teaching the science of "Chiropractic" with offices at 307 Phoenix Building, St. Paul, as indicated by his card. We were greatly amused and somewhat interested, coming up from the cities last Saturday evening, in listening to Mr. Hammerle's explanation of the new science, and of the miraculous cures which he had personally effected during the preceding six weeks. "Chiropractic," Mr. Hammerle informed us, is a new science of healing without drugs. It is in harmony with nature's laws, seldom fails and never does harm. It is based on a correct knowledge of the nerves, etc. Mr. Hammerle informed us that he commenced the study of this new science on the 11th day of April and graduated at the head of class, of one, three weeks later, paying a tuition therefor of $500. Since his graduation Paul has been engaged in running his fingers up and down the backbone of numerous patients afflicted with tuberculosis, rheumantism, impaired eyesight, deafness, appendicitis, and all the other ills which mortal flesh is heir to, for the purpose of locating the cause of the various diseases, and up to date has never failed in diagnosing the disease, nor in applying the proper remedy. He has during the past six weeks, as he asserts, succeeded in separating his patients from the sum of $2,000, in the aggregate, and expects to rake in an additional $5,000 during the next three months. Verily Dr. P. W. is a success.

BOOK NOTICES

Radiotherapy, Phototherapy and High Frequency Currents. The Medical and Surgical Applications of Radiology in Diagnosis and Treatment. By Charles Warrenne Allen, M. D., Professor of Dermatology in the New York Post-Graduate Medical School. Octavo, 618 pages, 131 engravings and 27 plates. Cloth, $4.50, net. Lea Brothers & Co., Publishers, Philadelphia and New York.

The almost startling growth of radiotherapy and phototherapy during the last few years has necessitated the rapid evolution of the specialist, already trained in original observation, who shall keep pace with so important a branch of medicine. It is with great interest that we note the appearance of a treatise by such a specialist, designed to give the histories of the now many new therapies, their application, and what may in the future be predicted of each.

Dr. Allen has handled his subject in a masterful way, dealing with these subtle and far-reaching forces clearly and understandingly. Throughout the work the reader is impressed that the book is one of facts rather than of opinions.

Following a brief history of the *x*-rays, the author discusses in careful detail the apparatus necessary to produce them as well as methods of application. As to the probable nature of the *x*-rays, he points out that the theory of extremely rapid wave vibration is now generally accepted.

In the chapter on light we are reminded of the various theories of light, its physical properties, chemical action, etc. Then follows a discussion of the different lights used in treating a large number of cases from many sources. The reader has here placed before him complete instructions for the production of each kind of light vibration, together with the conclusions of the author and many other authorities as to the best method of application of each.

To the busy physician who desires a practical working knowledge of radium and high-frequency currents placed before him in a thoroughly scientific, yet readable, form, this book stands perhaps above all others of its class.

In discussing the therapeutic application of these agents, Dr. Allen makes many valuable suggestions as to dosage and the diseases susceptible to relief. Throughout the entire work one cannot help being impressed by the stress authorities are now putting upon the vibratory nature of the phenomena under discussion.

The author has introduced a classification of the radiant forces according to their wave motion, "beginning with the Herzian waves on the one hand, and sliding, by fine gradations, successively to the electric, heat, light, actinic, Becquerel, and lastly, the *x*-rays." This, he says, is a tempting scientific classification which seems rather convincing. The atomic vibrations which he mentions later on would doubtless be placed at the end of the series.

Our attention is called to the very interesting fact that the *n*-rays of Blondelot, which are very high-frequency electromagnetic waves radiated from the body, may be caused to traverse a thin copper wire.

The text is amply provided with half-tones and line drawings, illustrating many of the important kinds of apparatus and the results of their application.

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine Surgery, etc. Volume II, Fourteenth Series. 1904. Price, $2. J. B. Lippincott Co., Philadelphia.

Vol. II of the 14th series of this popular publication of Lippincott is at hand. These clinical studies are full of interesting information of the newest sort.

The opening clinic is on the spread of disease by insects, and is by Dr. Mason of the army. The campaign against these nuisances is assuming proportions at once vast and effective. Besides this matter of Dr. Mason, those interested should examine the Book-Lover's Magazine for August.

Dr. McRae follows with more similar lore in tropical medicine about the dreaded tsetse fly, and the curious ailment, the sleeping sickness.

By the way, can varioloid, varicella, Trinidad epidemic contribute to clarity of terminology?

Malarial Anemias fill two clinics—one from a Greek source.

Uncinarrius of so much interest in Porto Rico and the South, receives exhaustive treatment by Dr. Smith of Philadelphia.

Twenty-two cuts illustrate the methods of Dr. Rugh of Jefferson Medical College, of dealing with ankylosed joints. The accompanying text is full and discriminating.

There is little dead-wood in this number.

CORRESPONDENCE

A MEDICAL SOCIETY'S PICNIC

Minneapolis, August 10th, 1904.

Editor Northwestern Lancet:

I have just had the pleasure of attending the annual picnic of the Crow River Valley Medical Society. There was a full attendance of the members and besides myself Drs. Benjamin, Nippert, and Erdman of Minneapolis, and Drs. Beebe and Boehm, of St. Cloud were present as guests.

The substantial character of the members is well shown by a picture of the president, Dr. Archibald, of Atwater, which I fortunately secured. The very retiring disposition of the secretary, Dr. Robertson, was the cause of my failure to secure his picture.

Dr. F. M. Archibald, Atwater.

The meeting was held on the banks of Lake Koronis, which is a beautiful sheet of water at New Paynesville. One of the pleasures of the afternoon was a delightful launch ride on this lake.

The scientific part of the meeting consisted of the report of a case of embolus of the axillary artery causing gangrene of the entire arm, and requiring amputation at the shoulder-joint. The necessity of high amputation was emphasized, as even then in this case there was some sloughing of the flaps. This case was reported by Dr. Sherwood, of Kimball, and was fully discussed by members and guests.

The next paper, by Dr. C. Johnson of Willmar, was a defense of the scientific use of drugs, and it was an able answer to the iconoclastic ideas of some physicians of the present day. This paper so fully and concisely covered the ground that it left no chance for discussion. Fortunately, it appears in this number of the Lancet.

The last paper was an exhaustive discussion of the diagnosis, prognosis, and treatment of ulcers of the cornea, by Dr. Robertson.

I showed the society some *x*-ray pictures, and tried to convince the members that it was impossible for them to make an accurate diagnosis of fractures or the location of foreign bodies without the use of the skiagraph.

Then the real business of the day commenced, and there was no recess taken until the next morning. If there was any thing to eat or drink that the physicians of New Paynesville forgot to provide, no one present could name it. Dr. Pilon, chairman of the committee, was an ideal host, and Dr. Putney was a good second.

Twenty-four hours were full of enjoyment and profit.

Very truly,
W. T. Spring.

CERTIFIED MILK

Minneapolis, August 20th, 1904.

Editor Northwestern Lancet:

The Milk Commission of the Hennepin County Medical Society hereby announces to the physicians of Minneapolis that Mr. John B. Irwin has fulfilled the requirements of said Commission, and has been granted the right to sell certified milk. This certificate is good only to Sept. 7th. At the expiration of this time, providing the milk maintains its standard, a new certificate will be issued. Each bottle of certified milk must contain a label provided by the Society. This milk can be obtained only from the Minneapolis Milk Company.

Lester W. Day, Secretary.

NEWS ITEMS

Dr. L. A. Williams of Iona, has located at Slayton.

Dr. G. C. Hoff has moved from Zumbrota to Willmar.

Dr. J. Mark, formerly of Stephen, has located at Pelan.

Dr. H. L. Saylor has resumed practice at Cogswell, N. D.

Dr. I. W. Lynn, of Canada, has located at Langdon, N. D.

Dr. E. A. Anderson has located permanently at Devils Lake, N. D.

The Columbus Hospital of Great Falls, Montana, is to be enlarged.

Dr. Wm. Henry Still, of Montreal, Canada, has located in Sioux Falls, S. D.

Dr. A. J. Paulson, of Flaxton, N. D., has moved to Fertile, in this state.

Dr. P. H. Sunde has moved from Northwood, N. D., to Wilton, in the same state.

Dr. O. G. Bean, who thought of locating at Enderlin, N. D., decided to go to Walcott.

Dr. F. W. Bullen, of Eveleth, was married last month to Miss Maude Betts, of Kingston.

Drs. Ridgman and Kyes, of Grand Rapids, Wis., have established a hospital in that place.

Montevideo wants a hospital and the citizens will contribute liberally towards a building fund.

Dr. A. B. Newman, of Hankinson, N. D., has sold his practice to Dr. C. F. Marsten, of Michigan.

Dr. A. C. Baker, of Fergus Falls, was married last month to Miss Katharyn Hodgson, of Elbow Lake.

Dr. S. M. Jenks, of Madison, S. D., was married last month to Miss Edith Pratt, of Faribault, Minn.

Dr. L. O. Clement, of Lamberton, was married last month to Miss Adelaide Claghorn, of Waseca.

Dr. John Lyng has moved from Alexandria to Minneapolis and now has an office at 24 Fourth street S.

Dr. George L. Walton, the eminent Boston neurologist, has been visiting in Minneapolis, and is now in the Yellowstone Park.

The Union Hospital at Akeley is nearing completion, and when done will be a very commodious and complete hospital building.

Dr. Adolph Stierle, State University, '01, who has been an assistant in the Two Harbors Hospital for the past year, will locate in Floodwood.

Dr. A. P. Walling, who has done many years of pioneer work at Park Rapids, is making a trip from Park Rapids to Louisville, Ky., on a bicycle.

Dr. C. B. Powell has purchased the practice of Dr. R. Keene, of Bellingham. Dr. Keene will take a post-graduate course in the East, and locate elsewhere.

Dr. Charlotte P. Campbell, a State University graduate, class of 1900, who is now practicing at Gardner, N. D., was married last month to W. J. Pratt, of the same place.

Dr. H. J. McDonald, of La Crosse, Wis., drew a rich prize in the Bonesteel drawing, but he refused to perjure himself to obtain the land by swearing to his intention to locate on it.

The physicians of the upper peninsula of Michigan organized the upper Peninsula Medical Society at Marquette, Mich., last month, with the following officers: President, Dr. E. H. Flynn, of Marquette; vice-president, Dr. E. H. Gardner, of Hancock; secretary and treasurer, Dr. S. E. Cruse, of Iron Mountain.

The Grand Forks District Medical Society held its annual meeting last month at Minto, N. D., and the following officers for the current year were elected: President, Dr. George Williamson, Ardoch; vice-president, Dr. R. F. Beek, Lakota; secretary, Dr. H. H. Healy, Grand Forks; treasurer, Dr. A. A. Westeen, Grand Forks.

FOR SALE

The books and book-cases and the surgical instruments and instrument-case of the late Dr. W. H. Hanscom will be sold at very low prices. Information may be had by writing or calling upon Mrs. W. H. Hanscom, 601 19th Ave., So., Minneapolis.

GOOD OPENING

There is a good opening for a young, unmarried physician in a centrally located office in a growing city of Minnesota. Several good appointments can be transferred. Office furniture, instruments, etc., for sale at $200. For further particulars, address A. R. F., care NORTHWESTERN LANCET.

POST-GRADUATE WORK

DOCTOR: If you want practical post-graduate work during fine season in the delightful city, write for particulars. NEW ORLEANS POLYCLINIC P. O. Box 707, New Orleans.

NORTHWESTERN LANCET
A Semimonthly Medical Journal
VOL. XXIV SEPTEMBER 15, 1904 No. 18

GASTROSTOMY IN ESOPHAGEAL STRICTURE*

By JAMES H. DUNN, M. D.
MINNEAPOLIS

In frequency and in difficulty of cure, cicatricial stricture by far overshadows all other benign affections of the esophagus. Despite the great ingenuity and perfection of modern methods and apparatus for dealing with disease of this organ, a strangely large proportion of these strictures still come to the surgeon soon or late in a practically impassable condition, that is, in such condition that no guide can be made to reach the stomach, or more frequently, though with much patience and skill, fine instruments may be passed; dilatation, even with the many and constantly increasing number of clever devices, is tedious, difficult, inefficient, and often dangerous. Doubtless there are several reasons for this fact. In some instances the extent and severity of the primary lesion may be such that the best efforts of both the patients and his attendants are unavailing in preventing progressive contraction. More frequently the ignorance or carelessness of the patients or their sponsors is a decided factor, while occasionally faulty diagnosis or strikingly inefficient treatment must be suspected of a large responsibility for allowing these strictures to reach a state requiring opening of the stomach. Yet, after all proper allowances are made for such extrinsic factors, these progressive relapses are, it is believed, chiefly and most fatally due to two defects in the methods of treatment commonly in vogue:

1. To a prolonged, often months or years, irritation and infection of these coarctations with food and instruments.

2. To a failure to promptly restore the calibre of the tube to something approximating the normal. Such a course is most favorable to the continued increase of scar tissue and to the relapse and aggravation of the stricture.

The importance of a prompt and approximately complete restoration of the urethral calibre in securing something like permanence of results in urethral strictures has been generally appreciated since the important work of Otis; but the average practice as well as the usual instruments, even the most recently designed for the treatment of esophageal stricture, show that the ability to swallow with reasonable satisfaction is too often taken as the standard of dilatation rather than an approximate restoration of the normal calibre, precisely as, prior to the teaching of Otis, satisfactory urination was the end of active treatment in urethral stricture until the inevitable relapse forced the patient to seek relief from a worse condition than his first.

With the methods now at our disposal, especially with Dunham's apparatus, most strictures of large calibre and many readily dilatable ones, even of the smallest calibre, through which a filiform bougie can with patience and skill be worked, may and should be treated from above. Presumably no one would advise opening of the stomach in treating such cases. It is decidedly not the writer's intention to countenance such a procedure. He cannot, however, sympathize with the views of many—*e. g.*, Bentz, who claims that "retrograde dilatation ought rarely to be necessary, even in the most serious cases, and that temporary gastrostomy is a serious, troublesome, and dangerous procedure." Quite on the contrary, there are distinct advantages in extending rather

---

(This paper was read by Dr. Dunn before the American Surgical Association, at St. Louis, on the morning of June 16th, and he died in the afternoon of the same day. —Editor of The Lancet.)

than limiting the field of temporary gastrostomy and the through-and-through treatment of all very difficult esophageal strictures, applying it not only to the really impassable ones but to many others. These antagonists of through-and-through treatment often report cases as a great victory in which by diligent work through three or four months a moderate opening has been secured. Perhaps less danger, more comfort, a better and surely a more rapid result could have been secured by the method which it is the purpose of this paper to advocate, first, and particularly in impassable strictures, and second in cases especially difficult, tedious, or dangerous to manage from above.

Opening of the stomach and retrograde or through-and-through treatment of certain esophageal strictures has been generally recognized since Loretta's operation in 1883. This operation was based upon the undeniable fact that, owing to dilatations, distortions, and changes above the stricture, retrograde sounding is often readily accomplished when passage from above is impossible. Indeed, the basic principles in the treatment of this condition are—

1. To safely get a reliable guide through the canal.
2. To divide the scar tissue sufficiently.
3. Efficient gradual dilatation.
4. Relative asepsis and rest of the wounded surface by preventing the stagnation of food, and for a time even the irritation of its passage.

Discoveries and improvements in operative technique, thanks especially to Abbe, Stamm, and Dunham, have been from time to time made, which have finally completely changed the situation, leaving us in a position to approach one of these cases with a very definite, certain, and safe technique, with a minimum of discomfort to the patient, and it is believed with a more permanent result.

It is perhaps needless to say that no essential originality is here claimed, but the fact that the writer did not fully appreciate the full advantage of many points in the methods advocated until he had in a measure rediscovered them in their application, led him to believe the matter worthy of reiteration and discussion.

During the first decade after Loretta's operation opinion seemed to be divided as to whether it should be done in one or two stages. Ten years ago Kendall Franks predicted as follows: "I believe Loretta's method will come more and more into use, for the reason that with proper precautions the risk of opening the stomach at once can be reduced to practically *nil,* while if we form a fistula we must forego certain other very decided advantages to the patient." This prediction has failed absolutely, because a practically sure method of getting a guide through (Dunham's string washing) and an improved gastrostomy has robbed the procedure of Loretta of all possible advantages, while all its disadvantages remain with it. On the other hand, the many disadvantages of the one-stage operation are nearly eliminated in the present method:

1. The operation is far less severe and much safer.
2. Starved patients may be recuperated before treating the stricture.
3. The treatment of the stricture may be much more thorough, scientific, and complete before the stomach is closed.
4. A greater degree of cleanliness and rest of the esophagus during the healing of the internal esophagotomy is secured.

However, the practice, particularly in England and America, has always favored a 2-stage operation; and, although the results have been fairly satisfactory and the mortality small, a faulty technique has rendered the treatment far from ideal. Often, the gastric fistula has been very troublesome and required a second operation for its closure. This operation having originally been undertaken for the distinct purpose of retrograde sounding, the inclination is to make the fistula unnecessarily large. The importance of the Stamm-Kader form of gastrostomy is becoming generally appreciated in these cases, and those with much practical experience with it appreciate that if the tube used be very large, leakage is apt to occur, but it is only when one comes to fully appreciate by practical experience that any esophageal stricture may be ***commanded perfectly and with precision by means now at hand, through very small gastric fistulae,*** even those the size of a No. 20 French catheter, that all the advantages of this method appear.

About two years ago the writer's attention was attracted by the methods and instruments of Dr. Theodore Dunham, through the kindness of Dr. Mixter, and since then he has evolved a technique which in his last three cases has proved so satisfactory as to be a revelation to himself of the possibilities of a combination of the principles and methods chiefly devised by American surgeons in the treatment of severe and difficult cicatricial strictures of the esophagus.

The first step is the application of the Stamm-Kader gastrostomy. The operation is too well known to require any description, but the size of the tube is of the greatest importance, especially in some cases—*e. g.*, in an emaciated infant with a very small and thin stomach. Perhaps with the severe cough and irascible disposition of such long-starved chidren, crying and fighting incessantly for food, anything larger than a No. 20 feeding tube is likely to give great trouble from leakage. In no case, even in adults, is a tube larger than a No. 30 French scale necessary or desirable. This procedure requires but a few minutes, is practically without danger, even in very weak subjects. If a brief general anesthetic is feared, it may be easily done under local anesthesia. The starved patient may be at once fed through the tube and recuperated for a week before further disturbance by treatment. The dangers and discomforts of this operation are less than those accompanying a very difficult sounding.

The second step is now undertaken: After a week's absolute rest of the esophagus and feeding through the tube, it is a matter of common observation that the stricture is usually decidedly more permeable, and it is exceedingly rare that water cannot be swallowed with considerable more rapidity than at the time of opening the stomach. By Dunham's string-washing method a strong black thread is washed into the stomach and readily fished out with a blunt hook. If in rare cases, especially in children with a stricture so tight that water cannot pass in a continuous stream, however fine, this procedure does not at once succeed, patience and repeated trials will not fail. The thread having passed, a long loop of fish line is drawn through to the mouth, giving two guides through the esophagus. To one of these a small wire and spindle bougie (Dunham's) is attached and drawn through from below. Others may follow until the size of the gastrostomy opening is equalled, when retrograde passage of the bougies is changed to drawing them through the mouth into the stomach, and then back, without stretching or disturbing the small gastric fistula. As soon as the bougie begins to wedge tightly in the stricture the other fish line by Abbe's admirable method releases it by a few chafings. This is continued until the stricture is opened up as widely as is deemed safe at one sitting. In case a good free calibre is at once established the gastrostomy tube may be immediately removed and the fistula very promptly heals. This course was pursued in one case. There was not a drop of leakage at any time, and the fistula was soundly healed in two weeks. Should it not be deemed safe to raise the calibre so rapidly, or desirable to longer keep the esophageal wounds from contact with ingesta, the tube may be retained another week or two, and at intervals of three or four days renewed dilatation and string-sawing resumed until a calibre admitting of each handling from above is reached. Dunham's apparatus contains a "string tunnel esophagotome" for sawing strictures from above, but it is certainly much more facile for both patient and surgeon, the stomach once having been opened, to continue the through-and-through method until a good calibre has been attained and the further use of the string-saw rendered unnecessary. While Dunham's wire and spindle bougies are very excellent instruments, the writer has found similar spindles tunnelled to slip over "stout string" or fish line upon which they are fixed by knots in the string, a simpler, handier, and equally efficient apparatus. Nor has the writer found it necessary to employ the guards to protect the epiglottis and stomach from the chafing of the string, which only cuts where it is tightly wedged in the stricture by the spindle. This reduces the special apparatus to a set of spindles, a fish line, a strong black thread,. and a glass funnel and catheter for infants, or a glass drinking tube for older children and adults. With this very simple armament, all of which with the exception of a set of dilating spindles may be extemporized in any hospital on a few moments' notice, one may feel complete master of any esophageal stricture however difficult, and may proceed with a precision, safety, and success unequailed by any other method so far devised. It cannot be denied that strictures may be treated with more or less success by various methods, but that one which combines the greatest simplicity, safety, and comfort to the patient, which admits of the most rapid, and cleanly, and undisturbed healing, and which may be reduced to the most definite and precise technique, must be admitted the superior.

Abbe's string-saw, in connection with Dunham's wire and spindle bougies, would appear to be the safest, simplest, and most efficient means for rapid enlargement of these strictures, and preferable to divulsion or continuous dilatation by drawing in elastic rubber tubes. Though considerable success follows the use of such methods, precisely as the divulsion and continuous dilatation of urethal strictures has not been without success, yet more precise and surgical methods are preferred. In most cases by this method the esophageal calibre is rapidly brought up to a size admitting of comfortable swallowing, *e. g.*, about the size which is commonly regarded as sufficient, and often reached only after months of persistent dilating from above. Such a size having been comparatively rapidly attained, then progressive dilatation should be continued regularly until a size much larger than the calibre of the sounds and bougies usually found in the instrument shops is attained. After this has been accomplished, prophylactic sounding at longer and longer intervals should be insisted upon.

By this plan it has not been found necessary to give an anesthetic more than once in each case. The gastric fistulæ have not leaked and have promptly closed spontaneously. A calibre admitting of the free swallowing of solids has been reached in from one to three weeks, and an approximately normal calibre reached in from two to four months, after which the tendency to relapse has not been marked. One case, having passed a bougie only once in three months for the past year, shows no appreciable recontraction. Of course, as is well known, cases of enormously extensive or total stricture of the esophagus are refractory under any method of treatment.

Case I.—Miss Rose P——, aged nineteen years. In April and May, 1902, had a severe typhoid fever; severe hemorrhages from the bowels in the third week; in the fifth week otitis media of the right ear. At the end of the sixth week left hospital for her home in the country. Before leaving she had called her physician's attention to some difficulty in swallowing, but he had assured her that it was due to a paralysis of the muscles of the throat, and would recover in time. After going home she experienced progressively increasing difficulty in swallowing, but consulted no one, as she and her parents supposed it a sequel of typhoid which would pass off in time, besides they were rather phlegmatic people, living remote from a physician. She had furthermore been living on milk and fluid diet, hence the seriousness of the dysphagia was not fully appreciated, though she was extremely emaciated. By August 1st she was practically unable to swallow anything; even water was ingested with great difficulty and in very small amounts. This forced her to seek medical advice at San Raphael's Hospital, where she was fed per rectum, and repeated attempts during the next week were made to pass bougies of all kinds, but without avail. The stricture was located 30 cm. from the teeth.

August 10th. Stamm-Kader gastrostomy, No. 30 French tube. Patient was fed by stomach tube for two weeks while waiting for a set of Dunham's instruments ordered from New York.

The string was readily washed through; the No. 10 wire and spindle bougie could not be drawn through the stricture with considerable force, showing the stricture to be remarkably tight and unyielding, but by means of the string-saws and bougies it was at one sitting brought up to No. 36, and a few days later to a calibre admitting the largest bougie in the set.

The stomach fistula was then allowed to close. A special set of dilators was ordered made. For eight weeks bougies gradually increasing in size were passed every second day till one 65 mm. in circumference was easily passed. She then had this bougie passed at one, two, and three weeks' intervals until April, 1903. Since then bougies passed once in three months show no evidence of any tendency to recontraction.

CASE II.—S. B——, female, aged nine years. Four years ago accidentally drank concentrated lye. Five months later began the passage of bougies two ar three times a week. This was continued very regularly for a year; as near as could be learned nothing larger than a No. 22 had been passed. For the past eight months a small bougie, No. 20, had been passed very regularly two or three times a week, but it had evidently never, or not for a long time, reached the stomach. For the past nine days very little if anything had been swallowed, even water, unless taken very slowly, was regurgitated. She was very emaciated and too weak to sit up long at a time.

Examination showed one stricture about 20 cm. from the teeth, of about 20 calibre, through which a bougie had been passed for four years. Near the cardiac end was an obstruction through which it was impossible after many attempts to pass a filiform bougie.

September 15, 1903, a temporary Stamm-Kader gastrostomy with a No. 30 tube was made. The patient, fed by the tube for a week, was much relieved. September 22d a guide-thread was readily washed through; the stricture was tight enough to grasp a loop of fish twine quite tightly. With Dunham's wire and spindle bougies and Abbe's string-saw the stricture was at once raised to a No. 24, from below upward, then from above downward, up to 38. After forty-eight hours the tube was removed from the stomach, and feeding by the mouth allowed. Deglutition of solids and liquids appeared to be quite normal. There was never the slightest leak before or after the tube was removed, and the fistula closed promptly. From September 25th to November 10th gradual dilatation was practised, at first every second, and later every third day. At this time she passed a No. 46 bougie without difficulty, and she had become very fleshy, and returned to her home in the country. Perhaps the dilatation should have been carried somewhat further, as the lower coarctation, about 2 cm. in length and very unyielding, could still be very distinctly felt by a large bougie, but in a rather small child of nine years it was thought that a calibre of 45 mm. might be tentatively tried for a while, and she was directed to pass the bougie twice a week and return for examination in three months.

CASE III.—Eva. W——, aged two years. Nine months ago, when fifteen months of age, the child drank concentrated lye. She was very sick for three weeks, and finally vomited up a complete ring of dead mucous membrane, half an inch wide, which the attending physician examined and drew on to his finger. About eight weeks after the accident difficulty in swallowing liquids became manifest, and she had lived on liquids ever since for the past four months; these were ingested with increasing difficulty, the child fighting furiously and nearly constantly for anything to eat or drink, filling its dilated gullet with liquids only to regurgitate apparently all or nearly all in a few minutes and cry and fight for more. It had an almost incessant cough, and was literally wasted to skin and bones, its thighs being the size of a man's finger. The parents had been urged to have the child operated upon three months before, but had gone from physician to another with the hope of getting a dilatation from above, and though many attempts had been made by different physicians to pass bougies, none succeeded. At last, when convinced that the child was nearing its end from starvation, they consented to opening the stomach.

November 11, 1903, at St. Mary's Hospital, the temporary gastrostomy was made. The stomach was astonishingly small and thin, so that we hesitated to turn too much of it in in making the Stamm-Kader operation, and an unnecessarily large tube, 24 F., was used. The long-starved child coughed and cried and fought for food with its mother, who could not be induced to leave it, putting the severest possible test on the fistula, and there was after a few days a slight leakage, which proved most annoying. On the eighth day a string-guide was washed through without difficulty, and by the method described in the previous cases the stricture readily raised to a calibre of 32 mm. All attempts to control the leakage by retention catheters simply made matters worse, till all attempts to control it were abandoned and the tube removed, then the fistula soon closed and the child rapidly gained in flesh and strength, ceased to cough entirely, and left the hospital for its home at Howthr Lake, December 23, forty days after the gastrostomy, with instructions to pass the No. 32 twice a week and gradually increase it up to 36, which might be regarded as sufficient for the present, at least in a child of two years. The temporary but very considerable annoyance of the leakage might quite certainly have been avoided by using a still smaller tube; a No. 15 or No. 18 catheter would have served all the purposes of the dilatation by this method, and it is equally certain that in such a case the smallness of the fistula is, next to the enfolding of the stomach, the greatest guarantee against leakage and delay in spontaneous closure.

MEDICAL ORGANIZATION*

By George W. Baker, M. D.

OGDEN, UTAH

The question of medical organization suggests itself as one demanding consideration in the presidential address at this time. Theoretically, the plan of organization laid down by the American Medical Association is very complete in and of itself, but, without some modification, is it applicable to local conditions? is a problem for us to solve.

Professional differences exist at this time in Weber County, which it might be well for the House of Delegates to look into, and, if possible, devise means whereby elements by nature inharmonious may be made to harmonize. Anything that can be done in this direction will be a step toward a more perfect union of the profession in this state. After repeated efforts in this direction, covering a period of several months, I have deemed it advisable to turn the matter over to the Association for its consideration.

There is a scheme under way, having its initiative in the Kentucky State Association, to bring together, at the June meeting of the American Medical Association, representatives of the various state associations for the purpose of organizing an association of state association medical journals. The plan matured would have the respective state associations own and edit their own journal. The desirability of such a journal will be readily recognized as being a power in the hands of the profession to enforce its just demands upon municipality, state, and nation. Such a journal would afford a ready means of direct communication with the members of the association on matters of importance to the profession only, without passing through the columns of the daily press. In this connection it might be well to suggest that we are in need of a better and more rigid medical-practice act, including more rigid requirements for a state certificate. By this means we can secure an exchange of certificates with other states whose requirements are greater than ours, obviating the necessity of a re-examination on entering another state to practice. We are in need also of legislation increasing the powers of our state and local health boards. United action at this time is absolutely imperative, if we expect to accomplish anything in our next legislature, and nothing would aid more than a journal owned and edited by the association. I respectfully submit this question to this Association for a careful consideration that, if possible, the financial backing may be secured and arrangements made for such a publication in the near future.

The several phases of the life of the physician in relation to himself, the profession at large, and the laity, is a subject that has frequently engaged our attention during recent years. The physician himself, though he be not an angel or anywhere near the type of a perfect man, has certain well established rules governing his conduct, which he cannot violate without lowering his standard of manhood. His first duty is to himself if he would do his highest duty to his patient and the community at large. There are certain well defined moral principles accepted by all thinking people, which the unthinking will often tempt the kind and sympathetic physician to disregard in their desires to attain a selfish end. If he cannot be reached through sympathy, the financial side of the case will be made to appeal to him, and if he finds himself in need of the wherewithal to buy the comforts of this mortal life, as is often the case with the deserving disciple of Esculapius, he will be sorely tempted to do violence to his conscience and sin against the light and knowledge he possesses. The true physician's duty to himself will not allow him to do a single act that will cause him any remorse of conscience, even though his whole life be laid bare to the world.

This argument brings us face to face with the subject of medical ethics, which is of such vital importance to the body professional. This subject is often neglected, or entirely omitted from the curriculum of the medical college, and the individual student is left entirely free to formulate his own particular code. If he be so unfortunate a child of nature as to be minus a natural love of honor, or through his environment has had perverted his inherent love of doing right because it is right, he is an object of pity rather than of scorn. This subject might aptly be considered in its interurban, interstate, and international phases; but we will content ourselves with the interurban aspect, as it is with this we oftenest have to deal. We must admit the truth that "men are born, not made," also that there is a possibility of changing to a marked degree the character of one who is unfortunate enough to have not been a man with proper environment. Under ordinary conditions the stronger dominates the weaker, but this order of things is often reversed by the subtilty of the weaker, therefore let him who possesses the light "hide it not under a bushel," but let it so shine that it can be seen afar off, and perchance his fellow who is in the dark, seeing it, will gather an inspiration, and take it as his beacon-light and follow on to a higher order of life. Ethics demand that the consultant leave the result of his deliberations with the attendant entirely in the hands of the latter, and that he refrain from any subsequent expression to the patient or friends, except to strengthen their confidence in the attendant; and that inquisitive, meddlesome relatives, or friends, be given to understand that their interference is decidedly distasteful.

---

*Delivered at the Utah State Medical Association, Ogden, Utah, May 10 and 11, 1904.

One physician has absolutely no right to make social or professional calls on a case under treatment by another unless it be in emergency when the attending physician cannot be reached; then the attendant should be fully informed as to the exigency, what has been done, etc.

There is a practice entirely too common among the profession of one physician stepping in at the first opportunity and assuming charge of another's case, knowingly or otherwise, as the case may be. Such things occasionally occur as a result of interference on the part of neighbors or friends who have unbounded confidence in their own physician and assume that everyone else should do so. The physician's duty is plain in such a case: if he be caught unwittingly in such a trap, he should politely refuse any aid, and refrain from any expression concerning the case until the attending physician is called; then he should proceed as in ordinary consultation, and charge a consultation fee for the visit. The same patient will not do the same thing twice. Much, if not all, of such trouble can be avoided by educating the laity. Teach them that they owe the physician a duty which they must respect, and practice will be made easy.

One other point, which I shall mention briefly, is the too common habit of physicians expressing themselves disparagingly to patients regarding the work of others who may have been connected with the case on former occasions. This is especially true in surgery. Any man does himself a great injury when he allows himself to drop a single word detrimental to his professional brother, either directly or indirectly. There are such cases as one physician being asked for an opinion on some treatment of another, with a view to instituting malpractice proceedings, and I personally know of such proceedings having their origin in the opinion of a physician so consulted. The only way to treat such people is to show them the door, and reprimand them so severely that they will not proceed farther.

The physician is occasionally led into the delusion that by casting reflections upon the work of another who has formerly handled the case, he can gain the confidence of the patient. This is only a delusion, for, as a rule, the intelligent patient will regard the would-be friend as an assassin of his fellow physician. Such a course is entirely too common with the city magnate in his treatment of the country doctor. I do not presume to consider the entire field of ethics, but merely call attention to a few of what appear to me as the corner-stones of the code. All that is worth having in all that is written on medical ethics, is embraced in one short aphorism: "Do unto others as you would have them do unto you."

1. A CASE OF DISSEMINATED, MILIARY, TUBERCULOUS PERITONITIS, WITH ILEUS. ENTEROSTOMY, AND LATER RESECTION OF A PORTION OF THE INTESTINE—RECOVERY

2. A CASE OF PRIMARY INTESTINAL TUBERCULOSIS INVOLVING THE APPENDIX AND CECUM. REMOVAL OF THE APPENDIX, THE CECUM, AND A PORTION OF THE COLON AND ILEUM: ILEOCOLOSTOMY—RECOVERY*

By Andrew J. Hosmer, M. D.

SALT LAKE, UTAH

Case 1.—Mr. M——, Alpine, Utah, aged 20. Father and mother both living, and well; no tuberculosis in their families; one brother died in infancy.

The patient had always been perfectly well until six months before he came under my care; never had had any bowel trouble; bowels regular, normal, and free from pain. About six months before entering Holy Cross Hospital, Nov. 12, 1903, he began to have pain in his bowels. This pain at times was very severe, and greater over center and right side of abdomen. He diminished in weight, and his abdomen became a little more prominent. While these pains were very severe at times, and the boy not at all well, yet no physician was called until three days before he entered the hospital. At this time complete obstruction had occurred, the abdomen was greatly distended, the pulse very rapid, temperature only slightly elevated, and the patient was in a very critical condition.

Dr. Eghain of American Fork, who kindly referred the patient to me, had used all the methods known to overcome the obstruction, without operative measures. I advised immediate operation, and within an hour after entering the hospital, after a hasty but careful preparation, I opened the distended abdomen, through the right rectus muscle, disclosing a remarkable picture. Every part of the visceral and parietal peritoneum in sight was thickly studded with red, angry-looking ulcers, about the size of a pea, the intestines distended greatly, very red, and their walls at least three times their normal thickness, were surrounded with a bloody fluid. After emptying the abdominal cavity of this bloody fluid, it was noticed that the intestines in the right side and center of the abdomen were more diseased than in other places. There were no constricting bands or twisting of the bowels present. The walls of the intestines were so thickened, distended, and diseased that there was no peristaltic action,—the so-called paralysis of the bowels.

I quickly washed out the abdominal cavity with normal salt solution, and made an incision three inches long in one of the most diseased and distended intestines, and fastened the border of the intestinal incision to the borders of the peritoneum in the abdominal wound, closing the abdominal wound on either side. Gas and fecal matter escaped through the opening, and the pulse and general appearance of the patient were better than at the beginning of the operation. Immediately and continuously the intestines were being emptied through the artificial opening, and the patient continued to improve, but for several days no food was allowed.

The abdominal distention diminished, the pulse became slower and stronger, and gas and feces escaped the natural way, yet most of the intestinal contents came through the abdominal wound.

After five weeks the patient was apparently normal, except for the presence of the fecal fistula, and this showed no signs of healing.

December 21 I again opened the abdomen, and resected about six inches of the intestine, removing the portion involved in the artificial anus, making the anastomosis with the Murphy button, reinforced by means of the Halsted stitch.

---

*Delivered at the Utah State Medical Association, Ogden, Utah, May 10 and 11, 1904.

The abdominal cavity and intestines presented an entirely different picture at this time. The intestines were apparently their normal size, and their walls not thickened as before. In place of the numberless ulcers, were scars, very much resembling smallpox marks.

At the first opening of the abdomen, the whole surface resembled confluent smallpox just approaching the confluent stage, and now it was not unlike the pitting noticed weeks after recovery. The abdominal cavity was again washed out with normal salt solution, and the wound closed without drainage. It healed by primary union. The patient was not allowed food for one week; the button passed in ten days. He was allowed to be up in three weeks, appetite good, pulse normal, no pain.

At this writing the patient is apparently perfectly well, is working regularly, and has no bowel symptoms whatever.

A theory is now advanced that in a cure resulting from operative procedure, hyperleukocytosis and the bactericidal action of the blood serum are increased after operation.

Six unreported cases previous to this, operated on by me, are all now apparently well.

I have now no hesitation in advising operation in cases of this character. Dr. Halsted says that it is a conservative estimate that up to the present time, in the ascitic form of tuberculous peritonitis operative treatment has cured from 40 to 50 per cent; in the adhesive form about 25 per cent.

Dr. Rotch says laparotomy is indicated in all cases of tuberculous peritonitis, provided—

1. That the general condition of the patient permits it.

2. That there is an absence of evidence of cerebral, pulmonary, or extensive glandular, or osseous tuberculosis.

Infection of tuberculosis through the gastrointestinal tract is not uncommon.

Case 2.—Mr. F——, electrician. Father healthy, he having had one sister die of consumption; no tuberculosis in mother's family. The mother was a nervous woman, and had frequent headaches, otherwise healthy. The patient had three brothers, all healthy.

As a child the patient was the weakling of the family, never had any serious illness, but never strong, having frequent headaches. At the age of fifteen the family physician thought he might be tubercular, and sent him to the northern pineries of Minnesota. He returned apparently well, except a continuance of the headaches.

He first noticed pain in the abdomen in 1900. The attacks of pain were severe, and occurred about every three months, lasting from one to four days. He described the pain as a severe, dull pain that he could not get rid of, and it increased on taking food. The history continued with the attacks becoming more severe and more frequent. The pain was quite general over the bowels, being more severe in the region of the umbilicus and on the right side.

There was no marked rise of temperature during the attacks. His weight did not vary much from 125 lb., during the three years from 1900 to September, 1903, when I first saw him in one of his attacks. At this time his pulse was about 100; no rise of temperature; abdomen retracted, very sensitive, and hard; and a satisfactory examination could not be made. I did not see him again until January, 1904, when after recovering from another attack, he consulted me at my office. On palpation I found a sensitive, movable mass the size of a child's fist, in the cecal region. A careful general physical examination revealed no other pathological condition or evidence of tuberculosis. I advised a surgical procedure, and accordingly he entered Holy Cross Hospital on January 16, 1904, and after a careful preparation I operated on that date.

The incision was made through the anterior border of the right rectus muscle. The mesenteric glands were slightly enlarged. The mass was sufficiently movable to allow its being delivered through the incision on to the abdomen. The appendix, about four inches of the cecum, and a portion of the ileum, were greatly thickened, and apparently agglutinated together. About two inches above this mass, on the anterior and outer surface of the cecum, there was an ulcerated surface the size of a half dollar. The intestinal wall was nearly destroyed, there being a transparent membrane separating the intestinal contents from the peritoneal cavity. On opening the cecum and placing an instrument on the inner surface, the instrument could be plainly seen through the thin wall. An early perforation appeared to me imminent.

I resected the cecum with the appendix, a portion of the ileum, and the ascending colon above the ulcerated area, and made an anastomosis between the ileum and the ascending colon, by means of a large Murphy button, slipping one end of the button into the open end of the ileum, and the other into the open end of the colon, and locking or closing the button without cutting the walls of the gut or using ligatures. And after closing the free ends of the ileum and colon, and reassuring the anastomosis by means of the Halsted stitch, I closed the abdomen without drainage.

The patient was not given food for six days, and no medicine was given. On the seventh day the bowels moved without assistance, the button passing with the first stool. From this time food was allowed, and the bowels moved normally. The patient left the hospital in three weeks in excellent condition, and has had no bad symptoms since. He now weighs 140 lb., a gain of fifteen pounds, and he recently told me that he has had no pain in his abdomen.

Senn says that "primary tuberculosis of the intestines, while not common, occasionally occurs, and the infection is from without, usually in the form of tubercular milk or meat. The lymph follicles and Peyer's patches furnish the most favorable anatomic conditions for the localization, and growth, of the tubercular bacillus."

Wyss found, in seventy-one post mortems on children, three instances of undoubted primary, intestinal tuberculosis. Intestinal tuberculosis is most frequently found in children and young adults. The vulnerability is increased in young tissue.

In all cases of cecal tuberculosis operated on by Czerny, the ulceration was limited on one side by the ileocecal valve.

Senn also says "It seems that two distinct anatomicopathologic forms may be described, associated with different symptoms, the one a fibrous, and the other an ulcerating variety. Moreover, these may be combined, or there may be noticed many intermediate stages between the varieties."

Ordinarily the lesions are most marked around the ileocecal valve. The appendix is usually affected, and constitutes a part of the inflammatory mass. Senn further says that these large tubercular swellings in the ileocecal region have often been mistaken for malignant disease.

When healing occurs in the ulcerative cases, stenosis with intestinal obstruction is likely to occur. I saw an autopsy on one of Nothnagel's cases in Vienna in 1897,—a woman 70 years of age,—in which the lumen of the colon, about four inches above the ileocecal valve, was not larger than a lead pencil, and the dilated bowel below contained a double handful of fruit seeds. A diagnosis of appendicitis had been made.

Mayo Robson, when he finds a tuberculous area in the abdominal cavity that can be removed, removes it, and his results justify this procedure.

DISCUSSION

Dr. G. W. Perkins: The cases I have seen are not very common. Dr. Hosmer must have seen more than I have. The cases I have seen are usually more accidental than otherwise. The peculiar feature of these cases is that, when accidentally operated upon, they have recovered, and some have permanently recovered. The surgeon has opened the abdomen in doubt as to what he would find, and found nothing that could be removed. In former times it was advised that the abdominal cavity be drained when that operation was performed; of later years I find that the advice is to operate, and close without drainage. The mere opening of the abdomen and emptying the fluid seems to effect a curative agency, and the fact that many of the cases have recovered under a simple exploratory operation has justified it, wherever there have been cases of suspected tuberculosis.

Dr. U. Worthington: This is rather an intricate subject, and a very interesting one. I do not propose exactly to discuss the paper in the absence of the writer, and especially to call attention to that portion of it that I might not agree with. We often come in contact with these tuberculous conditions, and they usually come to us with diagnosis of typhoid fever, and require careful examination and close watching of the temperature, in order to come to a definite conclusion. There is but one form of this condition that is benefited by operation, in my judgment, and that is the so-called exudating situs, where the situs is present in the abdomen. A sufficient amount of irritation is produced to overcome the secretion of the fluid in the abdomen by introducing into the abdomen a weak solution of formaldehyde. By the introduction of that irritant you change that into the lymph, and it simply mats the whole abdominal viscera together. The last case I saw demonstrated the condition of affairs. A man came from Wyoming, and entered St. Mark's hospital and remained there several weeks, with a diagnosis of typhoid fever. I was called in consultation. We came to a diagnosis of tubercular peritonitis. We opened the abdomen, and introduced a weak solution of formaldehyde. That case made recovery from the first entrance into the hospital, but after getting out, the distention of the abdomen reappeared. We opened the abdomen again, and found the whole mass of the intestines throughout simply matted together with a mass of adhesions. The thickening was very readily seen. That was the reason probably that the recovery was not entirely complete without operating. The simple opening up of the abdomen and draining it out, and then placing in the slight irritant, caused an agglutination of the bowels and the patient made a nice recovery.

THE HOSPITAL BULLETIN

ST. BARNABAS HOSPITAL

MINNEAPOLIS

A CASE OF ADDISON'S DISEASE

In the Service of Dr. K. Hoegh

J. D——, aged 27 years, farmer. About two and one-half years ago he noticed several, at first mild, dyspeptic symptoms, of which he remembers poor appetite, distress after meal from feeling of distension in epigastrium, occasional waterbrash; a tendency to constipation. Gradually he noticed loss of muscular strength, and of weight. He took some patent medicine, which mainly seems to have been purgative; as his self-administered medication did not have the desired effect, he went to a medical institution, where he was treated for "catarrh of the stomach" and "intestinal indigestion." While in this hospital he had an attack of very severe pain, which is described as having started in left side of lumbar region, and to have radiated, seemingly following the course of left ureter, into pelvis and penis. The attack lasted about 12 hours; it was accompanied by frequent desire to urinate, but with the voiding of only a moderate quantity of urine. After the attack had gradually subsided, the abdomen remained very sore for some days. When the patient had entered the hospital, about 16 months after the first symptoms of impaired health had made their appearance, and about 14 months before he came under my observation, he had lost flesh to some slight extent. After the attack the loss of flesh became rapid and reached a high degree. His normal weight had been 165 pounds; when he left the hospital he weighed 105 pounds. He returned home, took some patent medicine and went up to 145 pounds in weight. Thinking that a change of climate might benefit him, he went to California, where he lost flesh and strength rapidly. A few days ago he had an attack of pain similar to the one he had at the hospital, but it was located on right side, and was not so severe as the first attack. During it, he passed frequently small quantities of urine. After the attack he passed a large quantity of clear fluid, perhaps 2 quarts or more. His present complaints are the above mentioned dyspeptic symptoms, anorexia, epigastric distress, belching and constipation, great loss of muscular strength, so that he is unable to walk fast and not at all more than half a mile on even ground; shortness of wind; coldness of extremities; somewhat frequent micturition, 6 to 8 times in 24 hours, often accompanied by slight burning pains. He denies cough and other symptoms from respiratory organs, except dyspnea upon exertion. Sleep normal, no headache, spasms or cramps. He presents a peculiar appearance; he is very tall, but emaciated to high degree, his present weight being 100 pounds. There is a peculiar dusky color on both cheeks, that at first suggested a hectic flush; when it was found that he had no hectic symptoms, the color was studied closer, and appeared more dusky; at the same time it was noticed that there was in both temples and on both sides of forehead a symmetrical discoloration of a dark tan, suggesting the color after treatment with Roentgen rays. Although he had not been exposed much to the sun, the hands and lower part of forearms were also darker than in healthy individuals of his complexion. Around the middle of the body there was a belt of slightly darker color than the rest of the skin. There were no swollen glands to be seen or felt in neck, arm pits or groins; no enlargement of liver or spleen. In his urine was found a small quantity of albumin, by Esbach's test less than 1-1000; the microscope showed a few hyaline casts. The blood gave 80 per cent hemoglobin, 4½ million red and about 5,500 white blood-corpuscles. After test breakfast, no free acid is found in stomach contents 45 minutes later.

The patient was seen in the beginning of August, and after the diagnosis of Addison's disease was given, he was advised to go home, in the belief that treatment was useless.

Upon inquiry the patient recalls that he had grip either just before he noticed the first symptoms of his illness or shortly afterwards.

An analysis of the case reveals the following facts upon which to base the diagnosis:

1. Impaired digestion. 2. Great and progressive loss of muscular strength, including weakening of the heart, indicated by the rapid and small pulse and the coldness of the extremities. 3. Shortness of breath, which here means poor oxidation of the blood, as there is a sufficient number of erythrocytes and hemoglobin and no organic heart or lung disease. 4. Hypothermia, pointing to deficient tissue oxidation. 5. Occasional great disturbance of the function of the kidneys. 6. Excessive loss of tissues. 7. Pigmentation pointing to splitting up of hemoglobin.

A good many of these symptoms would be found in several diseases, but there is only one condition that readily will explain them all, while the assumption of any other disease would fail to account for this remarkable syndrome of morbid features.

The digestive symptoms cannot depend upon a grave organic disease of the stomach; in cancer, for instance, we do not see such enormous emaciation with so mild stomach symptoms. When emaciation reaches such a degree as here, the local symptoms are overwhelming. Nor do the early loss of strength, the shortness of breath, the hypothermia, the occasional interference with the functions of the kidneys readily arrange themselves under the picture of a cancer of the stomach. The absence of free muriatic acid is not pathognomonic for cancer; it is found in many other diseases. A degeneration or atrophy of the peptic glands of the stomach would, as long as the supplementary glands further down in the alimentary canal were intact, not produce this emaciation, nor would it explain the early and extreme loss of muscular strength, the kidney symptoms, the shortness of breath. The mild nephritis is equally unable to account for the symptoms. Tuberculosis of some internal organ might be considered, but there is no evidence of this disease in any of the organs that are accessible to physical examination and are the usual seat of this infection.

It is evident that we are confronted with a disease that impairs tissue oxidation and our suspicions are thus at once directed to the adrenal system. By assuming a disease that seriously interferes with the so-called internal secretion of the suprarenal glands, we cannot only readily explain the whole universal complex of symptoms, but we shall see that, such a lesion once assumed, the picture produced would become identical with this clinical case. The effect of the adrenal secretion is to increase the contractility of all muscles, striped and unstriped, and also that of the heart, which partakes of the qualities of both. Acting upon the blood vessels it increases the tension of all those that are endowed with a muscular coat, that is all vessels except the capillaries; consequently the veins and arteries are comparatively less filled, the capillaries better filled. If this physiological stimulus to the vessels is absent, the large vessels are overfilled and the capillaries comparatively empty; this impairs tissue nutrition. Furthermore the adrenal secretion is the oxygenating factor of the blood. There is good reason to believe that the adrenals secrete a ferment that enables the blood to absorb oxygen in the lungs and displace the carbon dioxide in the plasma, as well as to change the hemoglobin to oxyhemoglobin, whereby the tissues are supplied with the oxygen, that they need in their metabolism. Where this secretion is defective, oxidation is diminished, the blood is flooded by waste products, insufficiently oxidized, acting as poisons upon the tissues. It is thus evident, that insufficiency must lead to the gravest symptoms, and absence of the secretion must be fatal. Experiments have also proved this with absolute uniformity. In a case like the one described we can therefore not assume absence of the secretion, but only great deficiency. Every symptom we have in this case, corresponds exactly to the picture of this adrenal disease. The paresis of the muscles in the stomach and intestines, the glandular inactivity, the constipation, are necessary consequences of the absence (in sufficient quantity) of the physiological stimulus to the muscles, and of their unimpaired nutrition. The weak heart action belongs to the same category as the weakness of the voluntary muscles, which is such a prominent feature in our case. The shortness of respiration results from the insufficiency of the oxidizing ferment. The kidney disease results from the irritation by the insufficienty oxidized waste product. The ureteral spasms, occurring twice, find a similar explanation. The deposit of pigment is caused by breaking up of the hemoglobin, whereby pigment is liberated, some molecules of this iron containing complex being broken up, so that the iron is set free. With such a general disorganization of the whole metabolic service it is no wonder that excessive loss of tissue takes place—thus accounting for the great loss in body weight.

To further strengthen the diagnosis it is only necessary to mention that every one of the symptoms in this case, has been found in cases where post mortem examinations have established the diagnosis of Addison's disease.

NORTHWESTERN LANCET

A SEMIMONTHLY MEDICAL JOURNAL

The Official Organ of the Hennepin County Medical Society

W. A. JONES, M. D..................EDITOR

Editorial Office, 515 Pillsbury Building

W. L. KLEIN, PUBLISHER

SUBSCRIPTION, $2.00 A YEAR.

839-840 Lumber Exchange....................Minneapolis

SEPTEMBER 15, 1904

TRANSACTIONS OF THE UTAH STATE MEDICAL ASSOCIATION

We begin in this issue of THE LANCET the publication of the transactions and papers of the Utah State Medical Association. The Utah Association decided at its last meeting that it would publish its transactions in a medical journal, rather than in book form; and not having a state journal it decided to go outside. THE LANCET was chosen to do the work because, as the committee informs us, of its general worth as a medical journal. We appreciate the compliment, and we trust that the members of the Utah Association and its allied societies of adjoining states, will enjoy the reading of THE LANCET, and will also contribute to its various departments, and thus help to make it as interesting and useful to medical men in Utah, Idaho, Colorado, etc., as it is to medical men in Minnesota and the Dakotas, from whom it has hitherto mainly drawn the material for its columns. We are sure our present readers will be glad of the opportunity this publication will afford them to learn of the work being done in other states.

THE PERILS OF TOBACCO

Bamberger, in the Munchener Medicinische Wochenschrift, sounds a note of mild warning to the tobacco consumer. He does not take into account the death of the tobacco user who dies at the untimely age of 102, nor does he mention the snuff eater, who consumes in untidy manner the powder forms of tobacco. He refers forcibly to the smoker, and divides him into the "wet" and "dry" varieties. The man who does not saturate his cigar with saliva and who removes his cigar from his mouth between puffs, smokes a "dry" cigar, and does not extract the harmful substances from the tobacco, is safe from the poisonous effects of nicotine.

The smoker who chews, macerates or "wets" his cigar is in constant danger from absorbing deleterious substances. Such a smoker, if he adds to his vice the consumption of alcohol, even in minute doses, adds to the dangers of nicotine poisoning, as the alcohol aids in the dissolving and rapid diffusion of the nicotine.

When one looks over his acquaintances who smoke and drink he wonders why there are so few cases of acute poisoning. In fact, many of these renegades seem astonishingly well, and live in apparent peace and comfort, and enjoy themselves while the absteminous fall by the wayside.

Cigarette smokers suffer most, not from nicotine poisoning, as in the "wet" cigar smoker, but because so many use cigarettes to excess and usually inhale all of the smoke produced by the burning of the tobacco, and the chemicals that are found in the average cigarette.

Tobacco chewing is not considered directly harmful, as this form of tobacco contains but little nicotine, and, what is more important, it lacks the products of combustion.

The beginner who absorbs his nicotine in this fashion may not agree with the eminent investigator, his recollections are distressing and in his imagination he had all of the symptoms of a profound intoxication.

According to Erb, nicotine poisoning may be an important element in the production of arteriosclerosis, hence an additional danger.

Bamberger advises "dry" cigar smoking as a safeguard, as well as a proper toilet accompaniment.

Thoms has recently patented a method of preventing tobacco poisoning. It is based on the fact that certain iron salts hold in combination the bases of tobacco smoke. A tampon of cotton is dipped in ferric chloride and applied to the tip of the cigar. It provides ample protection, and it is affirmed that it improves the flavor of a cheap cigar, making its flavor more like that of genuine Havana tobacco. Smokers who have bought cigars in Germany, particularly of German manufacture, will appreciate the force of this suggestion. American or Havana cigars, and those "made in Germany" are two distinct forms of cigars. The German made cigars have never taken the blue ribbon premium in America.

The late Dr. Post of New York, in one of his lectures before his medical class years ago, suggested that a mild anesthesia of the rectum could be induced by the introduction of a cigar. He added, in his quiet way: "By the way, gentlemen, I think that is its proper place."

DECAPSULATION OF THE KIDNEYS

For a time it seemed as if the kidney might prove a favorable point for the surgeon. Bright's disease in any stage offered an opportunity for surgical skill. The internalist could do but little in grave cases, hence the suggestion, probably of accidental origin, that surgery was the rational therapeutic means of cure. Case after case was reported cured by eminent men, but, like other new remedies, the time limit for the cure was not carefully defined. A reaction is due, our statistics may change. More likely, however, the surgery of the kidney will lapse into quiescence from lack of enthusiasm on account of the many failures.

For years the theory held good that an abundance of albumen in the urine was sufficient evidence for the diagnosis of chronic or acute inflammation in the kidneys. It was even thought than one kidney might suffer from Bright's disease without involving the other kidney. These ideas are not in conformity with the teachings of the present day. Albumen is not an evidence of Bright's disease unless it is associated with other and more demonstrable disease processes. Transient or febrile states are so often accompanied by albumen in the urine that no alarm is now felt by the physician when it is present. It is found, too, in many old cases that the patient who shows a persistency of albumen, with or without casts, may live the expected time. True, there may be an acute process added to an old kidney which has been functionating badly, but that may be transient and remedial. Even if the acute stage becomes alarming, it is not always wise to resort to heroic surgical methods. The attempted cure may only aggravate the original trouble.

Operations for decapsulation are at best hazardous, and the severe cases operated upon have a mortality record of 26 per cent. Rosenstein, in the Deutsche Medicinische Wochenschrift, concludes from the six cases operated upon in Israel's clinic and the published material of Edebohls, that all the cases cured by decapsulation of the kidney were merely inflammatory processes, due to abnormal movability of the organ.

Permanent cure has not been obtained in severe Bright's disease. Many of the cases have been modified, and perhaps life has been more or less prolonged, but the cardinal and accompanying and annoying symptoms remain. The results are uncertain at best, as shown by the comparatively few cases reported in the medical press. The cases of death from operation, and the failures to relieve the symptoms, are not recorded for comparison.

TRANSACTIONS OF THE MINNESOTA STATE MEDICAL ASSOCIATION FOR 1904

The transactions of the State Association are now in the hands of the members, having been delivered nearly four months in advance of the usual time of getting the book out. The secretary, Dr. Thomas McDavitt, deserves great credit for getting the work out so early, and thus putting it into the hands of the members in time for reference in the preparation of papers for the fall and winter meetings of societies.

Notwithstanding the reading-time limit of fifteen minutes now placed upon papers, the book of Transactions grows in size, and the current volume contains 416 pages. The discussions are much fuller than ever before, and this speaks well for the society. When a paper elicits remarks from six, eight, or ten men, that paper contains something to think about, whether it is truth or fallacy; and so it is safe to say that when the papers of a society, local, state or national, prompt much discussion, the society is doing profitable work.

One feature of the volume testifies to the usual negligence of physicians. Many familiar names of members are not found on the roster, and this is because of the old habit of failing to pay dues. The secretary has no discretion in this matter: he simply puts on the list the names of members reported to him who have paid their dues.

The work of getting out a volume of transactions is enormous, and it falls both upon the secretary and the man who edits the copy and proof-reads the matter; and in spite of all the care that they may take errors, sometimes of an egregious character, will occur, but very often they would have been avoided had the writers of papers, etc., used ordinary care in their work.

It remains, of course, to be seen how many errors this work contains, but before any one complains too bitterly of an error affecting himself, he should inquire how it happened. For instance, some of the discussion was omitted after it was in type, because errors had been made in ascribing the discussion to the wrong speakers. This was caused by the failure of the reporter to obtain the name of the speaker, which should always be distinctly announced by the chair before the speaker proceeds with his remarks.

We think the Association will be pleased with the volume. It certainly contains a vast amount of valuable information, and fairly marks the progress of medicine in Minnesota.

REPORTS OF SOCIETIES

UTAH STATE MEDICAL ASSOCIATION

THE TENTH ANNUAL MEETING

Ogden, Utah, May 10 and 11, 1904.

TUESDAY, MAY 10

The tenth annual meeting was called to order at 2 p. m., President Baker in the chair.

Dr. S. Ewing, Chairman of the Committee on Transportation, reported that arrangements had been made for round-trip tickets for one fare and one-third for all members desiring to attend this meeting.

The President called upon Dr. J. W. Aird to state the meaning of the Report of Delegates. In response Dr. Aird stated that provision is made for delegates from other societies in Idaho, Colorado, and neighboring states to attend this meeting, and if such delegates are present and have any report to make, they should make it now.

The Secretary read the minutes of the last meeting of the Association, which was held in Salt Lake City on May 12 and 13, 1903. The minutes as read were approved.

Dr. J. N. Harrison, Treasurer, reported that the names of certain members should be dropped from the roll for non-payment of dues. The Treasurer further stated that Drs. E. S. Wright, U. Worthington, and himself, had been appointed as a committee to audit the accounts of previous treasurers of the Association, but that such auditing had not been done.

President Baker said it was moved, seconded, and carried at the last meeting that the Treasurer's accounts could go without auditing.

The Secretary stated that if this committee should take a year to make this report and then failed to do so, they might just as well be abolished. Dr. Harrison has gone to considerable trouble to put a definite sum opposite each man's name, which in the best of his judgment is the amount owing. He knows how much money he has on hand, and there have been a great many efforts to have this work looked over, and the committees appointed have not done their duty. The Secretary then moved that Dr. Harrison's present report, giving the amount of cash on hand and the debits, that is, the amounts owed by members of the Association up to date, be accepted as a true statement of the financial condition of the Association, and that the special committee appointed to audit the accounts be discharged. The motion was duly seconded and carried.

Dr. M. A. Hughes then took the chair, and announced the reading of the President's address. (See page 338.)

Dr. M. A. Hughes, Chairman of the Committee on Necrology, then read the report of said committee as follows:

REPORT OF COMMITTEE ON NECROLOGY

DR. WILLIAM THOMAS DALBY

Your committee on necrology wish to submit the following tribute to the memory of the late Dr. William Thomas Dalby.

Dr. Dalby was born in Lancaster County, Va., on April 8, 1859, and died in Salt Lake City, September 7, 1903. Dr. Dalby came to Salt Lake City in the summer of 1889, and soon took a prominent place in the medical profession of this city and state. He held the office of Health Commissioner of Salt Lake City for three and a half years beginning his term in 1894, and made an enviable record in the discharge of his duties while health officer. His reports while in this office were regarded as models, and were eagerly received and carefully read by those occupying similar positions in the various cities of the Union. Dr. Dalby served as vice president of the Utah State Medical Society for one year. His medical confreres always felt that in him they had a reliable consultant and his patrons always placed implicit confidence in him when in need of medical advice.

The subject of this sketch was very prominent in Masonic circles in this city and state. He joined Astlan Lodge No. 1, in Prescott, Arizona, in the year 1883, and after coming to Salt Lake City he became identified with Argenta Lodge No. 3. Dr. Dalby has occupied nearly all the prominent offices in Masonry in the lodges of this city and state, and was regarded as a model Mason, and enjoyed the fullest confidence of the brothers of this craft.

Dr. Dalby was married October 1, 1898, to Miss Fredrica Maud Reeves, an accomplished and most estimable young lady, the daughter of Judge Reeves, of Salt Lake City. The ceremony took place in St. Paul's Chapel. Besides his grief-stricken widow, Dr. Dalby left two beautiful orphan boys, who are deprived of the great advantage that would have been afforded them of fatherly care and noble example.

E. A. HUGHES,
S. EWING,
S. L. BRICK.

The report was accepted and approved, and ordered filed.

Dr. S. Ewing spoke in regard to the failure of members to pay dues and quoted from the Constitution and By-Laws of the Association upon the matter, stating that he would ask the enforcement of the rule that the names of all members whose dues are one year in arrears should be dropped from the roll, after having been notified by the Secretary of such arrearages, and having failed to respond. Such members could be re-instated by paying up their past dues.

The Secretary stated that in connection with Dr. Ewing's remarks he wished to say that he understood the Secretary was instructed to drop such names from the membership roll, and had been waiting for the past year to receive Dr. Harrison's report of those members who were in arrears before dropping their names from the roll; that when he received from the Treasurer the names of those members in arrears he would drop their names from the roll, and then notify them that such had been done, giving the reasons therefor.

The Secretary reported that Dr. Andrew J. Hosmer, who had the first paper on the program for the afternoon, was about to leave the state, but had forwarded his paper to the Secretary, with the request that the Secretary read the same before the Association.

Dr. P. E. Jones moved that the reading of this paper be deferred until later on in the session, after listening to the papers whose authors were present and prepared to read. The motion being duly seconded was carried and the reading of Dr. Hosmer's paper deferred.

The remainder of the afternoon was given to the reading and discussion of papers. (These papers and their discussion will appear in later issues of The Lancet.—Editor.)

After the reading of the papers the President announced that a banquet would be served at nine o'clock p. m. and desired to know how many members would remain.

Dr. S. L. Brick, of the Committee on Arrangements, reported that preparations had been made for fifty members.

The President announced that immediately after the close of the afternoon session, a meeting of the House of Delegates would be held.

On motion, duly seconded, the meeting adjourned until ten o'clock a. m. on Wednesday, May 11, 1904.

WEDNESDAY, MAY 11, 1904

The President called the meeting to order at 11:15 a. m. He announced that the next annual meeting of the American Medical Association will be held at Atlantic City, New Jersey, commencing June 7, 1904.

The President called for the Report of Correspondence, to which the Secretary responded by reading the various communications addressed to the Association.

On motion of Dr. S. Ewing, it was ordered that the correspondence be filed with the Secretary.

The President called for the Report of Delegates. No delegates being present, no response was made.

The President called for the Report of the House of Delegates, which was thereupon presented and read by the Secretary.

The President announced that the election of officers of the Association, pursuant to the nominations made by the House of Delegates, would be deferred until the afternoon meeting.

Dr. R. S. Joyce, Chairman of the Committee on Arrangements, stated that his committee had no report to make.

None of the special committees heretofore appointed having any report to make, the President announced that the next order of business was resolutions introducing new members.

The Secretary reported that at the meeting of the House of Delegates the following physicians were elected members of the Association:

R. C. Smedley, A. A. Kerr, Crayton C. Snyder, G. A. Dickson, W. B. Parkinson, Jr., H. B. Forbes, Lyman Skeen, Jr., R. A. Pearse, Ezra C. Rich, Edward I. Rich, E. M. Conroy, C. E. Coulter, J. E. Hosmer, E. K. Ward, F. C. Buchtel, D. H. Calder, Edward A. Rich.

Upon the call of the chair for any unfinished or miscellaneous business to be brought before the Association, Dr. M. A. Hughes offered the following resolution:

"WHEREAS, there is a very large percentage of pupils attending public schools who suffer from eye and ear diseases that tend to impair their progress in school,

"BE IT RESOLVED, that it is the sense of the Utah State Medical Association that steps should be taken toward detecting these diseases by simple tests that could be applied by the teachers in the various schools,

"AND BE IT FURTHER RESOLVED, that the President of this society appoint a committee of three to formulate rules for the above examination and offer their services to the State Board of Education toward carrying this plan into execution."

Different members discussed the resolution. Dr. L. W. Snow said the idea would be for the teachers to notify the parents, and they could consult their family physician. The physician could examine the case and treat it, if necessary. This would not compel the parents to do it, but would put them on their guard. He believed that simple measures of this kind, which would cost the state but very little, would result in a great deal of good.

Dr. F. Stauffer stated that there is a professor in the State Normal School for this express purpose; nevertheless he thought this committee should be appointed for further work along this line.

It having been moved and seconded that the resolution be adopted as the sense of this meeting, the same was thereupon unanimously adopted.

The chair appointed as members of said committee Drs. Hughes, Snow, and Stauffer.

The chair then announced that the reading and discussion of papers would be taken up for the remainder of the forenoon.

WEDNESDAY, MAY 11, 1904, 2 P. M.

The chair called the meeting to order at two o'clock p. m., and stated that before proceeding further he would announce that the Treasurer was prepared to receive dues and initiation fees of those members who have joined the Association.

Dr. J. F. Critchlow stated that in view of the fact that the election of officers is pending and will require but a few moments, he moved that the meeting proceed immediately to the election of officers.

The motion being duly seconded and carried, the chair announced that the election of officers was in order, and appointed Dr. Hughes and Dr. Osgood as tellers.

The Secretary announced that the nominees for President of the Association were Dr. P. E. Jones and Dr. E. F. Root, and that additional nominations might be made on the floor of the general meeting. No further nominations being made, a ballot was taken. Total number of votes cast, 26, 14 being in favor of Dr. Jones and 12 in favor of Dr. Root.

Dr. P. E. Jones, having received a majority of the votes cast, was duly elected president.

Dr. Harrison moved that the election of Dr. Jones be made unanimous, which motion was duly seconded and carried.

The Secretary announced that Dr. R. S. Joyce and Dr. A. S. Condon had been nominated for first vice-president of the Association. No further nominations being made, a ballot was taken. Total number of votes cast 28, 16 in favor of Dr. Joyce and 12 in favor of Dr. Condon.

Dr. R. S. Joyce, having received a majority of the votes cast, was duly elected first vice-president.

The Secretary stated that Dr. J. F. Critchlow and Dr. Geo. E. Robinson had been nominated for the office of second vice-president. No further nominations being made, a ballot was taken. Total number of votes cast 29, 20 being in favor of Dr. Critchlow, 8 in favor of Dr. Robinson and one in favor of Dr. Ellerbeck.

Dr. J. F. Critchlow, having received a majority of the votes cast, was duly elected second vice-president.

There being only one nomination for Secretary, on motion of Dr. U. Worthington the Secretary was instructed to cast the vote of all members present for Dr. W. S. Ellerbeck. This being done, Dr. Ellerbeck was declared elected secretary of the Association.

There being only one nomination for Treasurer, on motion of Dr. U. Worthington the Secretary was instructed to cast the vote of all members present for Dr. J. N. Harrison. This being done, Dr. Harrison was declared elected Treasurer of the Association.

The Secretary announced that Dr. W. W. Woodring, Dr. C. M. Wilson, and Dr. W. B. Parkinson had been nominated as trustees to serve for three years. On motion the Secretary was instructed to cast the vote of all members present for these three gentlemen as trustees. Such being done, they were declared elected as trustees to serve for three years.

The Secretary announced that Salt Lake had been selected by the House of Delegates as the place of meeting for 1905.

The reading and discussion of papers was then resumed.

After the reading of papers, upon motion of Dr. Condon, a vote of thanks was extended to the retiring officers of the Association.

On motion of Dr. Lyons, a vote of thanks was extended to the Ogden members of the Association who had so kindly entertained the visiting members.

Dr. Jones stated that before adjournment he wished to extend a hearty invitation to the members of the profession residing in Ogden and the northern part of the state to attend the next annual meeting of the Association to be held at Salt Lake City in May, 1905, as well as to all other members of the society outside of Salt Lake County, but particularly to the members of the Association in Weber County and the northern part of the state.

On behalf of the Ogden society, Dr. Baker extended to the visiting members a hearty invitation to meet again with the Weber County Society.

Dr. S. Ewing moved that the meeting proceed to the installation of officers and then close. The motion being duly seconded was carried.

The retiring president appointed Dr. Root and Dr. Aird to escort the incoming president to the chair.

Dr. P. E. Jones, the newly elected president, spoke as follows:

While very embarrassing, this is also a very happy period of my professional existence. Having, as most of you know, been associated with the older members in the organization of our state society, I have had its welfare and prosperity very much at heart. I have watched its growth and development from our small beginning ten years ago until this, I think I may safely say, our most successful session. It is with a feeling of satisfaction and gratitude that I look back over the brief period of our existence and so far as I can now recall this is the first instance in which you have made a serious mistake in the choice of your presiding officer. However, Mr. President and gentlemen, this is your mistake and not mine. All I can say to you today is to convey my most hearty appreciation and sincere thanks for this expression of your confidence and esteem and I give you my pledge to serve you to the extent of my ability.

On motion, the Association adjourned.

Meeting of House of Delegates, May 10, 1904

The meeting was called to order at 6 p. m. by the President of the Association.

The following qualified delegates were present:

Representing the Salt Lake County Medical Society: W. M. Thome, Henry La Motte, A. A. Kerr, I. A. E. Lyons, M. A. Hughes, E. F. Root, P. E. Jones, S. Ewing, S. C. Baldwin, Fred Stauffer, H. D. Niles, U. Worthington, J. N. Harrison, John F. Critchlow, L. W. Snow, Salt Lake; and R. C. Smedley, Bingham.

Representing the Utah County Medical Society: M. H. Hardy, Geo. E. Robison, J. W. Aird, Provo; J. F. Noyes, American Fork; and W. W. Woodring, Mt. Pleasant.

Representing the Weber County Medical Societies: C. F. Osgood, Morgan; J. S. Gordon and S. L. Brick, Ogden; W. B. Parkinson, Logan (Cache Co.); and A. S. Condon, Ogden.

Representing Summit County: C. M. Wilson, Park City.

The minutes of the last meeting were read by the Secretary, and on motion, duly seconded, were approved as read.

The chair stated that the first order of business was the nomination of officers for presentation to the general meeting.

The following nominations were thereupon made:

For president, Dr. P. E. Jones and Dr. E. F. Root.

For 1st vice-president, Dr. R. S. Joyce and Dr. A. S. Condon.

For 2d vice-president, Dr. Geo. E. Robinson and Dr. J. F. Critchlow.

For secretary, Dr. W. S. Ellerbeck.

For treasurer, Dr. J. N. Harrison.

For three trustees to serve for three years: Dr. W. W. Woodring, Dr. C. M. Wilson, and Dr. W. B. Parkinson.

For three members of judicial council to serve for three years: Dr. C. F. Osgood, Dr. H. D. Niles, Dr. J. S. Gordon, and Dr. U. Worthington.

Dr. Worthington stated that he wished to withdraw from this nomination in favor of Dr. Gordon. On motion of the Secretary, duly seconded, the Secretary was instructed to cast the ballot of the House of Delegates for the election of Dr. C. F. Osgood, Dr. H. D. Niles, and Dr. J. S. Gordon as members of the judicial council. Such being done, the chair declared the three gentlemen duly elected members of the judicial council.

On motion of Dr. Ellerbeck, duly seconded, the Secretary was instructed to cast the ballot of the House of Delegates for the re-election of the present Transportation Committee, to-wit: Dr. S. Ewing, Dr. S. H. Pinkerton, Dr. U. Worthington, and Dr. A. C. Behle.

Dr. A. S. Condon, Chairman of the Committee on New Members, presented the names of the following applicants for membership in the Association, the membership fee in each instance being already paid, or payment of same pledged by some member present: Dr. W. Brown Ewing, Salt Lake City; Dr. R. C. Smedley, Bingham; Dr. A. A. Kerr, Salt Lake; Dr. Crayton C. Snyder, Salt Lake; Dr. G. A. Dickson, Ogden; Dr. W. B. Parkinson, Jr., Logan; Dr. H. B. Forbes, Ogden; Dr. Lyman Skeen, Jr., Ogden; Dr. Ezra C. Rich, Ogden; Dr. Edward I. Rich, Ogden; Dr. Edward A. Rich, Brigham City; Dr. R. A. Pearse, Brigham City; Dr. E. M. Conroy, Ogden; Dr. C. E. Coulter, Ogden; Dr. J. E. Hosmer, Park City; Dr. E. K. Ward, Park City; Dr. F. C. Buchtel, Vernal; Dr. J. E. Morton, Heber City; Dr. D. H. Calder, Provo.

On motion of Dr. U. Worthington, the application of Dr. W. Brown Ewing was laid on the table, he not being eligible to membership becaused he had not practiced six months within the state of Utah, and the Secretary was instructed to notify Dr. Ewing of the action taken and the reason therefor.

On motion of Dr. P. E. Jones, it was ordered that the committee be given further time to investigate the application of Dr. Edward A. Rich, of Brigham City. The application was laid on the table.

On motion of Dr. U. Worthington, the committee was given further time to investigate the application of Dr. J. E. Morton, of Heber City.

Upon motion, duly seconded, it was unanimously ordered that the following applicants be admitted to membership in this Association: Dr. R. C. Smedley, Dr. A. A. Kerr, Dr. Crayton C. Snyder, Dr. G. A. Dickson, Dr. W. B. Parkinson, Jr., Dr. H. B. Forbes, Dr. Lyman Skeen, Jr., Dr. R. A. Pearse, Dr. Ezra C. Rich, Dr. Ed- Coulter, Dr. J. E. Hosmer, Dr. E. K. Ward, Dr. F. C. Buchtel, and Dr. D. H. Calder.

Upon further consideration the application of Dr. J. E. Morton was unfavorably acted upon, he not being a graduate of a "regular medical college" and hence not eligible to membership under our present Constitution.

On motion the meeting adjourned until 9 a. m., Wednesday.

MEETING OF HOUSE OF DELEGATES, MAY 11, 1904, 10 A. M.

The meeting was called to order by the President of the Association.

The Treasurer read his financial report for the year ending May 10, 1904, showing:

Balance on hand as reported at last meeting	$456.05
Collections at last meeting after report was made	108.00
Total receipts	$564.05
Total disbursements during the year	189.50
Balance on hand May 10, 1904	$374.55

On motion of Dr. Jones, the report was accepted and approved and ordered filed.

On motion of Dr. Stauffer, Dr. Jones and Dr. Ellerbeck were appointed a committee to make a contract with some medical journal for the ward I. Rich. Dr. E. M. Conroy, Dr. C. E. publication of the transactions of the Association and to furnish the society with a certain number of copies of the transactions, bound in pamphlet form, for distribution to the members.

On motion of Dr. Jones, it was ordered that the Secretary be paid $50.00 for his services during the past year, and that a vote of thanks be given the Treasurer for his services during the past year.

On motion of Dr. Osgood, it was ordered that the Treasurer be required to furnish a bond in the sum of $500.00, as required by the Constitution.

A discussion was had as to some of the provisions of the Constitution of the Association and proposed amendments thereto.

Dr. J. W. Aird presented his written motion to amend Article 10 of the Constitution by striking out the words "shall be graduates of regular colleges." In support of his motion, Dr. Aird said: "This would make it possible to take in such a person as Dr. Morton of Heber, whose application was presented yesterday. We cannot admit him under our present constitution. If this will answer, I will now give notice that at our next meeting we will change Article 10 of the Constitution."

The matter of acting upon the motion was deferred for one year, in accordance with the provisions of Chapter 12 of the By-Laws.

The matter of considering and acting upon the recommendations contained in the President's annual address was taken up.

The Secretary then read the recommendations contained in the President's address, and the same were discussed by different members, as follows:

DISCUSSION OF PRESIDENT'S ADDRESS

DR. P. E. JONES: I do not see how this House of Delegates can consistently take up local matters that pertain to any one county in the state, unless these conditions that now exist shall be submitted to this House of Delegates for consideration and recommendation. It seems to me that unless we have been first invited and requested to consider these local conditions, it is going to be a pretty difficult matter. As a member living outside of Weber County, I know nothing whatever about local conditions that may exist here. I understand that in Weber County there are two local medical associations. I see no objection to that if the profession in Ogden and Weber County are strong enough to support two local medical societies. Of course but one of these associations will be eligible for representation in this House of Delegates or the State Medical Society. If our President has been requested by the local profession to present the matter to us for our consideration, then that is a very different proposition. We would be in a position where it would be perfectly right, proper and courteous for us to consider the matter. But unless it comes to us in some such manner, it seems to me it would be somewhat doubtful propriety.

DR. S. EWING: I do not know what we have to discuss here. Simply if the President or anybody presents something here, we could soon see whether or not we had a right to take it up.

DR. OSGOOD: I am a member of one of the local societies of Weber County. The President of the State Association, being a member of one of the local societies here, has done all in his power to bring the two societies together. There is no doubt in the minds of the majority of the physicians of Weber County that it is detrimental to the interests not only of the medical profession of Weber County, but of the northern part of the State of Utah, to have two society factions among so limited a number of physicians. The difficulties here, as they have appeared to me, have been surmountable, and perhaps some suggestions from the House of Delegates would be helpful.

DR. H. J. POWERS: I am a member of the Weber County Medical Society, and hold my membership in the Utah State Medical Association by virtue of that. It seems to me that if one society is entitled to representation and the other one not, it will count for nothing. We have gone to work here and admitted members yesterday, members of both societies, and if one society is not to be recognized, I can see no advantage in admitting such members. Now that most of us are members of the State Association, I see no reason why the two societies could not unite together, and I would be pleased to see some harmony here.

DR. G. W. BAKER: I have been perhaps as well acquainted with this situation as anybody else for a number of years. The problem is this: According to the plans of the American Medical Association, the county society is made the unit—county, state, and national associations. Prior to the adoption of this rule we had existing here two societies, both of which were recognized by the State Association, and both having members in the State Association. Can this House of Delegates devise some means whereby these two societies can be brought together so that all can obtain membership in the American Association? You know nothing of the conditions here; you are not prepared to act upon it. Perhaps the better way would be to have a committee appointed, consisting of members of this House of Delegates, to investigate the situation and make a recommendation to the House of Delegates a year from this time. It would be impossible for them to do it now for want of time. A committee of three or five, composed of members from each of these societies and a member of this association who is a member of the House of Delegates.

Dr. Jones: I maintain that it is not the business of this House of Delegates to meddle with the local affairs of Weber County or any other county until that county has come in and requested us to consider their local affairs. We have already provided for this very question. Our Constitution provides who are eligible for membership in this society. As was stated on the floor, gentlemen were admitted yesterday to membership in this society who were not members of the Weber County Medical Society. We have exceeded our rights and prerogatives if such is the case. We have no right to admit members to the State Medical Association who are not members of the county societies, where such societies exist, and if we have over-stepped our rights and privileges in the matter of admitting members we should be called to time. Until Weber County comes to this House of Delegates and asks us to take steps in the matter, it seems to me it would be indiscreet and improper for us to take any action in the matter.

Dr. Ellerbeck: So far as admitting members from a non-affiliated society, such has not been done. At present both of the Weber County medical societies are in affiliation with the Utah State Association. They were both recognized by action of this Association some years ago. The same question came up, and it was deemed advisable to recognize for the time being both societies, in order that certain members of the State Association should not be turned out of the Association and others allowed to remain. The question for this House to decide perhaps would be, which is the original society and its representatives, and recognize the one that is the original society. As Secretary of the State Association I have investigated this matter, and I have heard both sides of the story, and it seems that at one time there existed here the Weber County Medical Society. Certain physicians in this city made application for membership in that society, and were refused admission as members. Subsequently at a certain meeting, when the majority was in favor of the admission of those certain members, action was taken in the matter, and they were elected as members of the society. The other members, seeing these new members had been forced upon them against their will, voted at another meeting to disband the Weber County Medical Society, and subsequently they made the Weber County Academy of Medicine, which is now the northern Utah Medical Association. A few members of the Weber County Medical Society continued, even though there had been a vote to disband it. The reason they cannot get together is this, that the proposition is for them all to get together and vote on each other as members of this new society. That would bring them back to where they were in the beginning, and the members who were not wanted in would not get in. We should take the entire list of both societies and constitute a new society with the members of both societies as charter members of the new society. This meeting can appoint a committee for this purpose or transact the matter right here, as they see fit.

Dr. Osgood: I very much approve of the suggestions made by our Secretary. I have very intimate friends on both sides, and I think this is the only practical solution of the problem.

Dr. Jones: As I understand, there is already in existence a Weber County Medical Society. The State Medical Society of Utah has gone out of existence. It is now the Utah State Medical Association. We are operating and existing under a new code, new constitution, and new by-laws. We must observe the conditions of our present constitution and by-laws. If it will help to adjust local matters, I see no objection for the two local societies to disband, and reorganize into a new society. But to be in affiliation with the Utah Medical Association it must be a county organization.

Dr. Baker: To conform to the plan of the American Medical Association, it should be the Weber County Medical Society.

Dr. Aird: I move you that the State Medical Association recognize the members from both these societies, and that they create a society to be known as the Weber County Medical Society, with the members of both these societies as charter members, and they can get together and organize, elect a president, secretary, etc., and that the State Association recognize this new organization.

Dr. Stauffer: I second the motion of Dr. Aird.

Dr. Baldwin: I would like to know what this House of Delegates has to do with the organization of any county societies. There is a society existing in Weber County, and I think the one thing we can do is for the two societies to get together and arrange that matter between themselves.

Dr. Root: I believe this House of Delegates has a right to make recommendations if they see fit. We have a right, I believe, to recognize any medical gentlemen in this district that is included in Weber County or the Northern Utah Medical Association.

Dr. Baker: The territory embraced in both these societies includes members from Morgan, Weber, Box Elder, and Cache Counties, though Cache County has no member in the Weber County Medical Society that I know of.

Dr. Ellerbeck: I don't want those physicians who live after us to have the same trouble we are having. Cache County is not very important, but it will be some day. Why create the northern Utah Medical Association to include the whole of northern Utah when some day Cache County will have a society of its own? I will second Dr. Aird's motion.

Dr. Jones: I offer an amendment to Dr. Aird's motion: That this House of Delegates recommend to the profession in Weber County that the two societies get together and organize one medical society. Let them give their society a name that suits themselves, but that this House of Delegates recommend to the medical profession in this county, which should embrace surrounding counties, the organization of a new society that may be in hearty affiliation with the State Association.

Dr. Powers: I will second the amendment of Dr. Jones.

Dr. Ellerbeck: As I stated before, I have investigated the matter, and I have come to the conclusion that a recommendation will do no good. You must do something pretty radical. I favor Dr. Aird's motion as originally read, namely, that we recognize but one society, to be known as the Weber County Medical Society, and the members of the two societies to be charter members of the new society.

Dr. Powers: I think this matter should be settled at this meeting, for the reason that if something is not done to bring the matter to a settlement we shall have the same question to deal with at the next meeting.

Dr. Aird: According to my motion, it is an entirely new society, beginning at this time, and by our motion and resolution we make the members who are members of both the local societies members of the new society.

Dr. Ellerbeck: I will offer an amendment to Dr. Aird's motion, and the amendment thereto, to the effect that the House of Delegates select a member belonging to each of these two societies to get together and call a meeting for the purpose of organizing this new society, after the plan suggested in Dr. Aird's motion.

Dr. Jones: I will accept Dr. Ellerbeck's amendment to take the place of my own, with the consent of my second.

Dr. Osgood signifying his consent, Dr. Jones withdrew his amendment in favor of Dr. Ellerbeck's amendment.

The motion of Dr. Aird, with Dr. Ellerbeck's amendment thereto, was then unanimously carried by the meeting.

On motion of Dr. Aird is was unanimously ordered that the presidents of the two local societies, Dr. J. S. Gordon and Dr. G. A. Dickson, be appointed as such committee.

Dr. Aird: I move you that the State Society do not recognize the now existing societies in Weber County.

Dr. Baker: That would be included in the other motions.

Dr. Osgood: I move you that at the meeting called by the presidents of the two societies for the union of the two societies, that it be expressed as the voice of this meeting that those who do not attend that meeting shall not be charter members, but their names will be voted on at later meetings.

Dr. Baker: That motion is out of order entirely, as the House of Delegates has already made all those members charter members of the new association.

Dr. Condon: Before we adjourn I desire to ask if there is any objection to the admittance of Dr. Rich of Box Elder into the Utah State Association. In justice to him and the State Association I think he should have a chance to explain himself, and I will ask for an explanation of the charges made against him. The gentleman is here, and I ask this House of Delegates if any one has objections to bringing this matter before it.

Dr. Jones: I move that Dr. Rich be invited to a seat in our meeting; and that the committee on membership, if they are convinced in their own minds that he is eligible to membership in our State Association, so report. If they do not wish any further time to investigate the application, that they report favorably and that we vote on his application. If they do desire more time to investigate the application, then I move you that he be invited to a seat in our association.

Dr. Condon: The committee does not require further time, except to know the objections of members to his admission.

Dr. S. Ewing: If there is any one member of this House who knows anything against Dr. Rich, it is his business to go to that committee and tell them.

Dr. Jones: I renew my motion, if the committee is satisfied and does not desire further time, that they make their report and we proceed to vote on the application.

The motion was duly seconded and carried.

Dr. Condon: The committee reports favorably. If any one has a tangible objection, it should be stated.

On motion of Dr. Niles, duly seconded, Dr. Edward A. Rich, of Brigham City, was admitted as a member of the Association.

On motion the House of Delegates adjourned until 1:30 o'clock p. m.

MEETING OF HOUSE OF DELEGATES, MAY 11, 1904, 1:30 P. M.

The meeting of the House of Delegates was called to order by the President at 1:30 p. m.

Dr. Ellerbeck: If there are any other recommendations in the President's address that should be considered here, they should be brought up now. What action will you take with reference to the correspondence read at the general meeting this morning?

Dr. Baker: I suggest that the matter be referred to the several county societies.

Dr. Ellerbeck: I suggest that the letters be referred to the Board of Trustees.

Dr. Bower: They want some definite answer.

Dr. Baker: This letter asks us to send a delegate representing our Association to the meeting of the American Medical Association in June.

Dr. Jones: I move that the delegate to the American Medical Association act as our representative at this meeting of state officials called for the purpose of considering the organization of the association journals.

The motion was duly seconded and carried.

On motion of Dr. Worthington, it was ordered that the next meeting of the Utah State Medical Association be held in Salt Lake City in May, 1905.

The Secretary was authorized and directed to have a transcript of the proceedings of the Association during this session prepared.

Dr. Jones moved that this House of Delegates authorize a variation of program, so as to bring the election of officers on as the first business before the Association, as many of the gentlemen must leave and would like to be present at the election.

The chair stated that Dr. Jones was out of order, as this is entirely a matter of the Executive Committee.

Dr. Jones: This is the business part of the organization. We have the power to change any of these rules if we see fit.

Dr. Baker: I will state to the House that I have some consideration for these gentlemen who have prepared their papers. This matter of business can be taken up at any time. I do not want to have these remaining papers read to an audience of six or seven.

Dr. Jones stated he wished to appeal from the decision of the chair that the House of Delegates has no right to entertain this motion and interfere with the work of the Executive Committee. The appeal was not sustained.

On motion of Dr. Ellerbeck, the House of Delegates adjourned.

NEWS ITEMS

Dr. V. Pleth, of Chicago, has located at St. Hilaire.

Dr. J. H. Jern, of Chicago, has located in West Duluth.

Dr. G. I. Smart will move from Blue Earth to California.

Dr. A. B. Newman, Great Bend, N. D., has moved to California.

Dr. E. H. Maercklin, of Milwaukee, has located at Forman, N. D.

Dr. George S. Ogle has moved from Madison, S. D., to Arlington, S. D.

Dr. E. A. Le Bien, from St. Louis, Mo., has located at McHenry, N. D.

Dr. G. L. Gossle, a Hamline graduate, formerly of Tracy, has located at Bemidji.

Dr. J. G. Chichester, of Redfield, S. D., has been doing special hospital work in Chicago.

Drs. Lamb and McMasters, of Sauk Center, have established a private hospital at that place.

Dr. F. W. Weeks, who has practiced in Welcome for seventeen years, has moved to Hastings.

Dr. K. E. Bergquist, of Henning, has sold his practice to Dr. Syver Vinje, and moved to Cokato.

The Deaconess Hospital of Grafton, N. D., was opened last week. The building cost over $10,000.

Aberdeen, S. D., will soon build a new city hospital with funds received from the sale of some city property.

Dr. O. W. Kankel of Tower, for the past two years connected with the Tower Hospital, has moved to Fertile.

Dr. P. R. Siberts, of Sparta, has gone to Chicago for post-graduate work, and will not return to Sparta for practice.

Dr. H. R. T. Ross, who graduated from Toronto and has practiced in South Africa, has located at New Richmond, Wis.

Dr. H. W. Olds, a recent graduate of the State University, has become the assistant of Dr. Knauff in the hospital at Two Harbors.

Dr. R. R. Rome, of Minneapolis, has purchased 120 acres of land at Lake Bemidji, and will build a number of cottages and conduct a sanitarium.

Dr. Ludwig Platon's hospital building at Valley City, N. D., will soon be ready for occupancy.

Dr. J. P. Isaacs, of Chicago, has located at Freeman, S. D.

Dr. A. C. Wedge, of Albert Lea, celebrated his 70th birthday last month. A bouquet of 70 asters was sent to the doctor from Chicago "from one of your babies."

Dr. C. M. Stanley, of Lidgerwood, and Dr. Spottswood, of Hankinson, N. D., have bought a plantation in Louisiana, near New Orleans. Dr. Stanley will take charge of it.

Dr. A. J. Lambert, of Des Moines, Iowa, has been visiting the north shore of Lake Superior to look up a site for a summer hotel and sanitarium which a number of Iowa physicians propose to establish.

The Benedictine Sisters have purchased the "Pine Lodge" Hospital of Dr. Sodwell of Cass Lake, and thus add one more hospital to a chain of well-conducted institutions between Duluth and Crookston. "Pine Lodge" will be enlarged.

FOR SALE

The books and book-cases and the surgical instruments and instrument-case of the late Dr. W. H. Hanscom will be sold at very low prices. Information may be had by writing or calling upon Mrs. W. H. Hanscom, 601 19th Ave., So., Minneapolis.

GOOD OPENING

There is a good opening for a young, unmarried physician in a centrally located office in a growing city of Minnesota. Several good appointments can be transferred. Office furniture, instruments, etc., for sale at $200. For further particulars, address A. R. F., care NORTHWESTERN LANCET.

POST-GRADUATE WORK

DOCTOR: If you want practical post-graduate work during fine season in the delightful city, write for particulars. NEW ORLEANS POLYCLINIC P. O. Box 797, New Orleans.

NORTHWESTERN LANCET

A Semimonthly Medical Journal

VOL. XXIV OCTOBER 1, 1904 No. 19

SUNDRIES*

By T. L. Hatch, M. D.

OWATONNA

While reflecting upon the selection of a subject for a paper for this meeting, the thought came to me that, while the larger subjects like pneumonia, typhoid fever, carcinoma, tuberculosis, appendicitis, gall-stones, and many others have been discussed and canvassed many times over, and while we have delved into bacteriology, pathology, and kindred branches of our science, it has been at the expense of the smaller and more common things, many of which are fundamental and consequently essential. It was with a view of a brief reviewal of a few of these subjects that the subject of this paper was chosen.

MIND AND MATTER

The impression has often come to me that, in the treatment of a given case, we often give too much attention to the disease and too little to the patient. It is continually becoming more and more recognized that man is a complex as well as a complicated being, and that mind and body are constantly acting and re-acting upon each other. If there is any one direction in which we have, in the past, failed more than in another, it is in overlooking the great influence of mind over body. How many of us have treated a disease for quite a period without beneficial results only to discover that some mental influence was obstructing our efforts? How often do we fail to measure the inner and finer sensibility and susceptibility of our patient, and appreciate this reflex influence upon his grosser makeup? How often do we fail to make application of this in the way of therapeutic suggestion?

Let me say, however, that while hypnotism and suggestion, when carried to a moderate degree, are potent remedies for good, they are also capable of much evil and a very wise discretion should be exercised in their use.

ACETANILID

When acetanilid and its congener, antefebrin, first made their apearance in the therapeutic world, many of us were very much afraid of them on account of their known depressing effects. Owing to the high price of many of the other remedies of this class at that time, I acquired the habit of using acetanilid in small doses, usually from one to three grains, but of course rather oftener repeated than if given in larger doses. In the case of young children I have given it in as small a dose as a fraction of a grain. While using the remedy in this manner I have never had a bad effect in a single instance, but have become convinced that it is one of the most valuable remedies we have. For relieving pain and promoting rest and quiet it is very effective. It is particularly beneficial in pains located either in the chest or pelvis. It also aids in diminishing reflex action, and through this means relieves a multitude of ailments. It also promotes diaphoresis, and thereby relieves high temperature. I very often combine it with other remedies, as, for instance, apomorphin to facilitate expectoration. For the same effect I frequently give it in connection with bicarbonate of potash. Caffein, salicin, salol, and various other remedies are also familiar combinations. As an emmemagogue it is very effective when combined with macrotin and carbonate of iron. When I don't know what is the matter with my patient and when I don't know what to give, but have to give something, I give acetanilid, and I have never yet given it when I had occasion to regret it.

---

*Read before the Southern Minnesota Medical Association, at Rochester, August 4, 1904.

APPENDICITIS

Appendicitis we always have with us, and while the mortality has been very largely reduced, it still has its share of victims. My opinion is that the cause for this result may be very largely expressed in the one word *delay*. I wish it distinctly understood that I am not locating the blame for this delay.

DRUGS

Of late there has been a tendency to give less medicine, and depend more upon strictly physiological methods in the treatment of disease. This is, undoubtedly, the correct practice if the pendulum does not swing too far in that direction. That drugs and therapeutic measures have a legitimate place in medicine there can be no doubt. Personally, I am a strong believer in drug therapeusis when properly administered.

While I am not a strict believer in specifics, there is one remedy that acts very positively upon the larynx that I believe approximates as near to a specific as anything in medicine. I allude to calcium iodid. In all forms of croup or any ordinary case of laryngitis I have found it very effective. Even in laryngeal tuberculosis it produces good results. As in the case of acetanilid, it acts very nicely in combination with other remedies.

H. S——, male, aged 19, German descent, occupation plumber. When called to see him he was suffering from a mild attack of typhoid fever. Found the abdominal muscles very tense; as much as I ever saw in a case of appendicitis. Upon my commenting upon it the patient stated that he had noticed this for several months and that it had been a source of worry to him. After his complete recovery from this attack of typhoid he visited my office and I found a continuance of this tension. While making a searching investigation for the cause, he dropped the remark about taking cold easily and it always settling in his head. Examination of the nasal passages revealed a polypus in the right side with sensitive spots in both sides. Questioning also revealed the fact that he was subject to slight asthmatic attacks. A correction of the abnormal condition of the nasal passages relieved all the symptoms referred to, including the abdominal tension.

THE DOCTOR'S FEE

The last of the small things to which I shall refer in this paper is the doctor's fee.

In connection with this subject I think you will all agree with me in two particulars: First, that though it is the last of the small things it is by no means the least; secondly, though this is true, it is often true that by the time the fee reaches the physician's pocket it has become so diminutive in size that it becomes microscopical. I have not the least disposition to call this society out on a strike to-day; and yet it is a noted fact that we are not getting enough for our services. Investigate the compensation given for any other services, from the laboring man up to the president of the United States, and compare it with what we receive, taking into consideration the time, labor, and money invested, the responsibility assumed, the ceaseless application, the eternal vigilance with its resultant wear and tear, and we can but admit the truth of this statement. Further, the fee that we often get is not compatible with our self-respect. Again, the fee received by the general practitioner or by him who practices internal medicine is not sufficiently large in comparison with what the specialist or the surgeon receives.

Let me cite a few cases that are happening every day. A surgeon performs an operation for appendicitis or gall-stones, or does a hysterectomy. We will assume that he spends from one to two hours in this work, including his preparation. He gets a fee not less than $100 and often as high as $1,000 for his work. In addition he gets the reputation of having done a brilliant operation.

The general practitioner is consulted by a man who is in the incipiency of Bright's disease, or by a patient in the very first stages of tuberculosis. He spends hours with these cases, and, while he probably gives very little medicine, he directs them in the matter of hygiene and right living, and effects a cure in each case. Or he is called to the accouchment chamber only to find a case requiring, not only the utmost skill, but one putting his mental and physical fortitude to a test for many weary hours. What is his compensation for these cases in comparison to what the surgeon receives?

I now come to a feature in connection with the subject of fees that has been receiving a great deal of discussion of late by the profession. I allude to the division of the fee between the specialist and the general practitioner. It is claimed that it is practiced every day, and includes the profession in our own state. It is a source of pleasure to me to be able to say that I have never seen any evidence of it.

Wherever the evil exists it is a pernicious one, degrading to him who practices it and demoralizing to the profession. The sooner steps are taken to effectually exterminate it the better for the profession. Just how this is to be done is an affair beyond the province of this paper.

I wish here to refer to one practice in connection with cases that are being treated by the general practitioner and the specialist which is a decidedly unjust one. I have a painful recollection of a personal experience on various occasions like this: The specialist does his work, and before leaving the town pockets his fee, while I am left to wait for mine from six months to two years, or perhaps never get it. Of course I expect to be the recipient of all the "kicks" that may accrue from any unfortunate or unsatisfactory outcome of the case; but I do feel that I should have a reasonable share of the regular compensation.

Since the beginning of this year we have had evidence of the commencement of an evil in this state which is fully as vicious as the one just under discussion. I allude to what is called lodge or contract practice. I am aware that while this may be new to this state, it is very common in some other localities. In the cities this same evil also presents itself in another form in the direction of the free dispensary. It should be a matter of congratulation to the profession that, in the city in this state where the evil presented itself, the local society promptly throttled it, and terminated its existence; for of all dastardly acts this is the most contemptible. He who practices it will be found at best to be but a fourth-rate practitioner. We expect the "quack" to get in his deadly work of graft upon the public, but the man who will work a graft upon his fellow practitioners should be relegated to innocuous desuetude.

One more thing in regard to the fee is its collection. While proper leniency and due consideration is always in order towards a patron, we are entitled to a right compensation for our services and within a reasonable length of time. There is no reason why the financial end of the physician's business should not be run on a commercial basis, at least as far as collections are concerned, as well as any other kind of business. We all know of the recent advance in price of all commodities required by the physician, and also that all with whom we do business expect prompt payment.

THE PHYSICIAN AS A CITIZEN

Thus far this paper has dealt briefly with matters pertaining to the every-day professional life of the physician. One more theme of a broader scope and along different lines remains for comment. I refer to the physician as a citizen.

I have to say and say it with pride that no impeachment can be brought against the medical fraternity as a class. Go into any line of business that you will, and you will find no class of men who stand better in the social, professional, or business world as to their integrity than the profession we represent. Neither will there be found fewer moral derelicts in any other calling. Further, without any spirit of adulation, when the last trump has been sounded and the Lord balances up his books, I doubt if any other vocation will have any larger credit for humane and philanthropic deeds than ours.

Yet, while all this is true, I can but feel that in one direction we are derelicts as citizens to the detriment of the public, to the profession as a class, and to ourselves as individuals. It has often been a subject for comment that the medical profession have largely kept aloof from taking part in the practical affairs pertaining to the public and in which every citizen should be interested. The result is that as a class we are very largely considered a nonentity when it comes to the consideration of matters of that character.

Aside from our having a duty which we owe to the community in which we live, it should be a matter of personal policy to the profession to participate more largely in measures which work for the public good. As applied to ourselves this is particularly true in regard to political affairs. It is not intended to convey the impression that we must enter politics sufficiently to become professional politicians, but we should to that extent that we may be enabled to maintain our rights and protect the interests of the public.

Had we been more active in this direction during the last decade we should not have gone down to an inglorious defeat in legislative matters as we have at various times in recent years, neither would we to-day see the representatives of a fad prescribing and dispensing medicines, practicing surgery, and attending cases of confinement with no more qualifications for the work than an ordinary farmer. It is all very well for us to talk of controlling and regulating these things by diplomacy, but the best remedy in these strenuous times is continuous, earnest and active aggression on the part of the profession.

THE SOCIAL STATUS OF THE DOCTOR*

By A. S. Condon, M. D.

OGDEN, UTAH

When I first contemplated the subject of this paper, a subject by the way that was chosen for me, I confess that I was painfully conscious that I could not do it justice nor meet your expectations, and the outlook, therefore, for the next fifteen minutes, is anything but inviting to either you or me.

This question involves for discussion to-day, not what the doctor's ideal social status ought to be, but what, *per se,* it is. This makes the problem all the more difficult, for, his social status not being fixed, it therefore cannot be located, and no two gentlemen present will probably agree with me or with each other in the premises.

Eleswhere than this the doctor's social equation is not so hard to find as it is in this newer Western country. In older communities the people are more stable, more cosmopolitan, and less apt to bunch together in protection of their mutual welfare, than in these newer settlements of the West, where coteries and clans are formed of people gathered from the same neighborhood of some distant state or country. I suppose that all comparatively new communities are very much alike in this respect, and the doctor finds, sooner or later, that he must make the struggle for existence alone, for here every man is for himself, "and the devil take the hindmost." And so daily, like a morning incense, his prayer goes up: "Oh, Lord, bless me and my wife, uncle John and his wife, us four, and no more, for Christ's sake, amen!"

And for this and other reasons the doctor "out West" is likely to flock by himself, nor does he always observe the amenities due his fellow practitioners, nor the ethical decalogue handed down from the Esculapian Sinai; and, sometimes, when he finds himself alone in the field of endeavor in his eagerness to get on and succeed he is apt to hurl himself against the hurdles instead of over them, and in the succeeding confusion he loses his way, and mixes the divinity of his profession with a layman's notions of thrift. And so the dominating power that should register his standard high because of the sacredness of the calling, is emasculated, and the eunuch of commercialism is enthroned in the temple of professional honor. The prestige of the doctor's vocation, not utterly destroyed by commercialism, is further impaired by a jealousy not found in any other profession under the sun, and I appeal to your own personal observation if this is not true.

If I were considering the doctor's social status at the present time, and if I were away from home, in Salt Lake City for instance, and I were speaking post prandial, why, I suppose I should say that the lowest social type of the profession may be found where the light of civilization has not yet illumined the dark recesses of paganism, but its highest conception is right up there in Ogden where every doctor is a David or a Jonathan to all the others. Up there in Ogden the doctors never shake the ladder while little Willie is on the unsteady top gathering rainbows among the clouds. O, no, they wait till little Willie comes down, and then they take the rainbows away from him.

The doctor's social status is a variable one, and may depend on a name gained by professional fidelity and skill, or on horse-sense to adjust his own ways to the customs and caprices of other people, or it may depend a good deal on accident and good luck; but we do know that the doctor that climbs the highest and stays the longest must have for armamentarium a combination of all these.

In these strenuous times every day but elaborates the law that the fittest will survive while the weak must go to the wall. And so it follows that a real strong character is made stronger by opposition, and a handicap imposed by jealous rivals is but a lever that lifts the man of merit above the wagging heads of his maligners, even as the eagle that shakes the grime of earth from his heaven-born pinions rises to meet the sun in his coming solely by breasting the adverse winds that beat against him in his upward flight. But the bird of weaker nerve and fiber floats along the drifting currents of air into a landing-place of uncertainty and, it may be, of disaster. And the human trifler born of base substance, no matter what his vocation and opportunity, also drifts along with the tide, till, when the supreme moment comes, he withers in the breath of the detractor as frost vanishes in the sun; and lets go his hold to sink beneath the murky waters of neglect, and at last into oblivion, to be "unknelled, uncoffined, and unknown."

---

*Delivered at the Utah State Medical Association, Ogden, Utah, May 10 and 11, 1904.

The doctor's social status is not so high as formerly, nor is it as high as it deserves to be, and for that condition he himself is largely to blame. But I do not mean to say that he is entirely responsible for all the flotsam and jetsam that obstructs the tide of his professional life, or for the tangled sargasso of that broader sea of social venture. The very nature of his calling prevents him from making the most out of himself. While others are hatching schemes that shall bring them wealth, and place, and power; with unparalleled self-sacrifice and devotion not found in any other profession on earth,—and I except none,—the doctor bides in the sick-chamber chilled and darkened by the shadow of death haply to stay the pale messenger on his merciless errand of sorrow. And so, in the intoxicating race of greed, the doctor is left behind and forgotten—left behind to bind up the wounds of those who have been broken on Fate's inexorable wheel along the hot trail of these modern Jasons in search of the Golden Fleece.

The science and art of medicine, and their allied congeners, have more than kept pace with the wizards that conjure the vasty deeps of Nature to yield up its fathomless secrets till the world stands amazed at the revelations daily written; but the pale taper that lights the rude laboratory of the twentieth century alchemist does not illumine the path that leads to the throne of wealth and power. And who is it that comes arrayed in purple and fine linen? Why, it is a promulgator of Pierce's Pink Pills for Pale People. He it is who is haloed with the plaudits of the rabble,—plaudits bought with gold that the doctor encourages the rabble to give up,—he it is who rides to glory in a dizzy chariot, noisy with the trappings of liveried servitors, and driven four-in-hand.

I say the doctor encourages this bizarre functionary and despoiler of himself by assisting the charlatan to dispense his wares and nostrums to the people who swallow them without intelligent purpose, and not infrequently to their own undoing. Think of the multifarious by-products and derivatives of common petroleum that to-day may be found in every home, and mutely pleading to be sold from every village grocery store in the state. How many sudden and deplorable deaths daily all over the land can be laid at the door of this indiscriminate method of drug taking? Let the mournful record of the daily press answer.

Another reason why the doctor is not oftener found among the "400" is his acquired indifference to the hollow and meaningless manifestations of society. So much of his time is spent in gazing upon the somber aspect of life's bleak picture, and in wandering through the decomposing charnel-house of worn-out and moribund ambition that it begets a contempt for the tawdry displays that he knows can last but an hour and then must pass away forever. His observation teaches him that those who strut across the stage of action will engage the public eye but a day, that all the actors are of the earth earthy, and that they, and even the mighty pillars of the universe they inhabit, will sometime crumble, and the whole fabric dissolve into thin air, and therefore all men, and conditions, and things are alike to him, and why should he seek to materialize himself in the evanescent dream of life?

These contemplations should, and do, cultivate a spirit of charity and forbearance in the heart of the doctor toward the conduct, and more especially the frailties, physical and otherwise, of the whole human family, with one exception, and that is his fellow worker in the same vineyard; and this is so patent that I need not longer dwell on it here. The doctor, therefore, becomes a student of human nature, a philosopher, and always a philanthropist. He is the only member of any cult or profession in the world who knowingly pursues a course of business that he is certain will be against his own material benefit. Has he not increased the longevity of civilized man in the last hundred years by nearly one-fourth? exorcised the demon of contagion that was wont to immolate a hecatomb of victims on the altar of indifference, ignorance, and superstition, sometimes in an hour? And he is still straining his eyes to catch the first beams of a day that shall usher in the consummation of yet greater achievements.

The doctor is the general utility man and purveyor of the public health and of private economics. He examines the water supply to see that no hidden menace to the people's vigor lurks therein, puts his nose into sewers and waste-basins of a city, looks to the sanitation of the school house, advises the people to be vaccinated and to clean and beautify the street, advocates the removal of health-destroying nuisances, asks that the smoke that hides the sun and contaminates the air be abated; and he ought to invoke the law to suppress the grossly immoral advertisements and nauseating patent medicine notices that appear in the local papers, and he might find something to engage his attention along those lines in the medical journals. The doctor neither asks nor receives compensation or praise for this, because it is one of the daily duties to which his whole life is dedicated and all his energies are consecrated.

Leaving now the doctor's social status as it is, let us turn to an elevated standard as it should be. In the first place because the whole medical profession are seeking one ultimate end, namely, the public weal, their professional and social intercourse should be in very fact what it appears to be on the surface; be in touch with the best general literature and thought of the day; keep abreast of the times in all discoveries in medicine and surgery and their kindred allies; and, above all things, get together and keep together for mutual help in grasping and digesting new scientific problems, and for mutual sympathy and pleasure. If one hungers for some gaudy plum of social or political consequence, the others should be boosters and not knockers, that it may be well with all the fraternity, for the exalted shall reach down and lift up to a higher level the masses of the brethren. Then, peradventure, one shall shed luster on all by gaining admittance to the Valhalla of the immortals, beyond the reach of the vandal and the iconoclast where even the envious finger of time cannot reach him among the great of the past that are worthy to live in enduring bronze and marble. And why not? Is he who is a benefactor to the whole human race not greater than is the good Samaritan of only a fraction? Certainly his forgetfulness of self and devotion to all others should secure for him a pedestal beside even the warrior whose life ebbed away in the cause of his country on the red field of battle; the diplomat whose cunning statecraft averted the horrors of war; the inventor from the womb of whose brain is born the essence of invisible power that drives the car of progress; the historian and poet who weave in song and story the records and traditions of their race; the astronomer who brings into the field of our vision the glory and beauty of the celestial universe; or the promoter who girdles the earth with steel, at once a bridge for the feet of industry and a harking ear to the people's needs. The doctor is surely worthy a place among these, because he has been to all the world more than any of these have been, a devotee of self-sacrifice, self-denial, and an all-round benefactor.

DISCUSSION

Dr. S. Ewing: I can say this, that the writer of the paper first read is a citizen, a soldier, a doctor, a gentleman, a poet. We must expect some vagaries and some imaginations from a poet, but that was a good paper. He stated in his paper that the doctor to-day does not have the high standing that he had years and ages ago. With all due deference to Dr. Condon, I say the facts of the case are absolutely opposite to that. The doctor to-day stands higher than he ever stood, higher morally, politically and in every way connected with the social realm than he ever did before. Such papers should be read in this society, for it helps us and brings us nearer together all the time. Now, I do not believe there is near as much jealousy and enmity in the medical profession as people think. If there are any jealousies and enmities at all, it is between the doctors who are practicing in one community. I believe I will say no more.

NOTES ON SOME RECENT PROGRESS IN NEUROLOGY*

By E. G. Gowans, B. S., M. D.

SALT LAKE, UTAH

"The statement that 'all men are born free and equal' is one of the greatest fallacies that has ever moved large bodies of men into action."

Man ranks above the lower animals very largely by virtue of his neural pre-eminence, rather than by special physical advantages, because he is physically inferior to many. The differences in nervous organization in brain morphology and brain capacity are responsible in a similar manner for the differences between individual men. These facts and the fact that there is such a large proportion of ailments which we are called upon to treat, which have a neural or psychic element in them, is my apology for bringing this subject before you on this occasion, and making a plea for a more extended knowledge of the anatomy and physiology of the nervous system, because of its great, its essential, importance in the training of medical men.

---

*Delivered at the Utah State Medical Association, Ogden, Utah, May 10 and 11, 1904.

We all know that the time is not long past when even professors in medical schools were willing to admit that they knew little or nothing of the anatomy of the nervous system, and there was probably some excuse for their ignorance, but that time is certainly now past. There is no excuse for us if we are not familiar with the large number of neurological facts which are quite accessible and of very great practical importance.

Dr. Barker of Chicago University says: "It is owing to our ignorance of the anatomy and physiology and pathology of the nervous system that we are unable as yet to manage as successfully as we would that host of so-called functional nervous disorders which unhappily are becoming so prevalent among us, and it is in a large part due to this ignorance that the flora of 'the Garden of Cagliostro' is so rank and that 'not until medical men understand psychology and learn how to recognize and cope with the pyschic factors of disease and ignorance,' need we hope to prevent the access to 'Gloria mundi' of some disciple of the Prince of Quacks."

This ignorance is due largely to the fact that medical schools have not recognized the importance of more systematic instruction in neurology, and the advantage of combining such instruction with research along the same lines. This condition is, however, happily passing away, and in place of the two to six weeks' course in neurology (I speak of the anatomy), the best schools are giving instruction for a period varying from three to six months. I would not, were I able, go into a discussion of the modern conception of the histological units of the nervous system or the inter-relation of these units, the way in which they are grouped, possibilities of their influencing each other as units or as groups of units, or the neuronal mechanisms which, united together, form the central and peripheral nervous system. Nor is it my purpose to call your attention to the details of method and technique by means of which we have arrived at our present knowledge of neurological facts, nor even to mention the names of those who have rendered such signal service to the profession as have some neurologists; but at the risk of seeming theoretical rather than practical I shall endeavor to describe one of the methods which is doing more at this time than probably any other to further our knowledge of the anatomy of the nervous system. Indeed, I know of nothing better calculated to arouse the enthusiasm and elicit the admiration of practical men than some knowledge of the progress in technical skill and of the enormous extension of our knowledge of the structure and formation of the nervous system, for we should not become so ultra-practical that we lose interest in the more purely scientific side of our professional work.

Passing over the progress that had been made in the method of isolation of parts, the cutting of sections, the differentiation of parts by means of the application of various coloring matters, and the various procedures of the psychologists with which you are familiar and which are all essentially differential methods, I will call to your attention a method which is integral and synthetic. It is a matter of common information that in the process of acquiring knowledge the analytical methods must precede the synthetical, and it is remarkable that while there has been in use for a long time a whole series of analytical methods, which have recently been wonderfully refined and perfected, there are so few methods which are synthetical and tend in the direction of integration.

The method which I shall briefly describe is that of "actual reconstruction in tangible form of the solid bodies in the nerve tissues from a faultless series of sections" (a method which has been carried out by a very limited but increasing number of workers). The method of Born for making wax models from serial sections is as follows: "It is essential (1) to have an accurate drawing of each section magnified to a certain degree, (2) to transfer the drawing to a wax plate, care being taken to magnify the thickness of the section in the same proportion as the length and breadth, (3) to cut each structure from the plates, (4) to pile each so as to show its own form and its relation to all other structures, and (5) to fuse the pieces of each structure into a unit." The drawings are made with the Zeiss projection apparatus, which shows a picture of the sections to be drawn on a screen, which can be so adjusted as to give the magnification desired. Outline drawings are made in which each bundle of medullated fibers is indicated, and by a color scheme the various bundles can be traced through the series by their respective colors.

The accuracy of the work is dependent upon microscopic control and comparison with the corresponding structures in a series cut in an opposite plane. The drawings are then transferred to wax plates using carbon paper. The plates are of uniform thickness and are as many times the thickness of the actual section as the outline drawings are times the length and breadth of the same sections. Each structure is then cut from the plate of wax and piled so as to reproduce in magnified form the original structure and when all structures are so reproduced, form and relations become an objective reality.

What, I think, will be generally considered to be epoch-making work in this method is that done by Dr. Florence R. Sabin, of Johns Hopkins University, whose model of the medulla and mid-brain has recently been reduplicated by Dr. F. Ziegler, of Freiburg, Germany, illustrations of which I have great pleasure in submitting for the consideration of the members of the Association. This method of investigation really originated with the embryologists in a desire to reproduce in three dimensions the form and relation of parts as seen in microscopic sections. It has been modified and perfected by Dr. Mall (undoubtedly one of the master teachers of the age), and used by him with great success in the study of his extensive series of the human embryos.

The importance from a diagnostic point of view of the model, the illustrations of which are now being passed around, will be obvious when it is remembered that it is that part of the brain in which the nuclei of origin of all the cranial nerves are found, that it includes association tracts between these nuclei, that it makes possible a tracing of tracts between the cord, cerebellum, and the fore-brain; and that the relation of the tracts to the nuclei is clearly shown.

It has been my good fortune to secure the guidance of Dr. Mall and Dr. Sabin in applying this method to a study of the region immediately cerebralward from Miss Sabin's model, the optic thalamus and subthalamic regions, and while the work is still incomplete and must be for some time to come, yet I hope I shall not be considered presumptious in believing that it will aid somewhat in the solution of some of the present-day neurological problems—problems which are probably among the most complex morphologically that are in existence.

It is without doubt the best of the integrative methods at present within our reach, and as it reaches a wider and wider application it will no doubt add more and more to the sum total of human knowledge.

To the members of this Association let me say that I do not believe we should be specialists in morphology to the neglect of physiology, or of either to the neglect of the practical, every-day side of our professional work; but I do say that the anatomist working alone tends to become one-sided; so also does the physiologist, the pathologist, and the clinician. In fact, if out of touch with one another, we are bound to reach erroneous conclusions, and the cause of truth, as well as our own profession, suffers thereby.

I have heard men say, "Well, as soon as I pass my state board examination, good-bye to anatomy and chemistry." With this attitude of mind toward such fundamental subjects, one might as well say "good-bye to accurate diagnosis and professional efficiency."

A more accurate knowledge of the anatomy and pathology of the nervous system will repay many times over the effort necessary to acquire it. Neurological diagnosis is admitted to be quite a difficult thing to master, and yet a correct opinion and proper treatment which is the legitimate end of medicine, depend upon it; and, too, with an accurate anatomical and physiological knowledge a precision and definiteness can frequently be attained in nervous diseases not possible elsewhere. You are all familiar with cases in which localization in brain and cord lesions has been absolutely accurate, and the prognosis correspondingly clear.

These are the legitimate fruits of accurate knowledge of the anatomy, physiology, and pathology of the nervous system, all of which is the result of the perfection of method and the increase in technical skill which has taken place in our own time, and is easily accessible to the earnest student anxious for the advancement of medical science and the welfare of the race.

DISCUSSION

Dr. W. Brown Ewing: I do not know that I have anything particular to add to the paper that has been read to-day. It gives a very good and satisfactory outline of the work that is being done in the anatomy of the nervous system and in the diagnosis and treatment of the diseases of the nervous system. Our old idea that the nervous system is an intricate network of fibres spreading all over the body was very beautiful, but at the same time very erroneous. It is a well known fact that the central neuron and the peripheral neuron are in very close proximity, but they are not continuous. Therefore you know, in case of brain injury, that you can accurately tell, whether it is the central neuron or the peripheral neuron that is injured. It makes a great deal of difference, as much difference in the location of the diseases as there is difference between day and night. It may put the location of the disease anywhere in the motor cerebrum, or in the anterior columns of the spinal cord, where if you would operate on the left side of the head for paralysis of the right side, it would make a great deal of difference whether you operated in the left side of the head or in the right lumbar vertebra, but you can tell from the character of the paralysis whether it is the peripheral neuron. The neuron theory, which is of comparatively recent discovery, has enabled us to locate diseases much more accurately and in some cases with absolute acccuracy. By the neuron theory and the use of electricity it can be located accurately. Unfortunately, we have no means of restoring a degenerated nerve cell, but it has gone so far that we can locate it. That, of course, in itself is a decided help. If you can locate exactly the disease, you have some chance at least of being of some service in the treatment of it. The greatest value of this advance probably has been in the value that surgical treatment has brought to the cure of nervous diseases and mental diseases as well. I may say for my part at least that I enjoyed this paper very much. I did not expect to make any remarks upon it, being an entirely new member of the society, but I enjoyed it thoroughly.

Dr. M. H. Hardy: The most I can offer is the closing remark of Dr. Ewing, that I have thoroughly enjoyed the paper. Although comparatively brief, it seems to me to be of such depth as to stimulate healthy thought in the right direction. I have not given crystallized thought to that special subject and do not attempt to offer anything in a scientific way, but it struck me as being along the line of that foundation that will lead to the practical application so much desired. We have diseases, mental diseases we say, and the expression has been used here. That leads up to a better conception and better idea of treatment of nervous diseases, and in some respects mental diseases. It is impossible to arrive at any line of demarcation between these three great fields, namely, physical, spiritual and mental. I am interested along the line of that paper, and I think we owe our thanks to Dr. Gowan for the presentation of it.

PENETRATING WOUNDS OF THE EYEBALL*

By L. W. Snow, M. D.

SALT LAKE, UTAH

Penetrating wounds of the eyeball are among the most serious injuries with which we have to contend, as they not only endanger the sight of the injured organ, but, through sympathetic inflammation, the well eye may become involved and total blindness result. In all wounds of this character it is of the greatest importance to ascertain as far as possible whether the instrument causing the wound was contaminated by septic matter and whether the foreign body has been retained in the eye.

When a patient claims that his eye is wounded the first step is to examine the seat, extent, and character of the wound, ascertain the interval since the injury, and test the sight of the eye. The earlier a case is seen after the injury the easier it usually is to discern the presence of a foreign body; after the lapse of one or two days such bodies are usually obscured by haziness of the surrounding media.

Penetrating wounds are less serious when they involve the cornea alone or the sclerotic behind the ciliary region. Such wounds of the cornea without injury to the iris or lens and without any prolapse of the iris, are rare. They often do very well, and if the case be not seen until one or two days after the injury the wound will often have healed sufficiently to retain the aqueous, and it may be difficult to decide whether the whole thickness of the cornea was penetrated or not. If the wound be not firmly closed and be in the region of the anterior chamber, this will be shallow, owing to escape of the aqueous. The ophthalmoscope may be valuable in establishing a diagnosis by revealing a localized hemorrhage in the vitreous cavity.

Wounds of the sclerotic seldom unite without the interposition of a layer of lymph. When seen early they should, if gaping, clean, and uncomplicated by evidence of internal injury, be treated by the insertion of fine sutures passed through the conjunctiva only, followed by cold applications.

---

*Delivered at the Utah State Medical Association, Ogden, Utah, May 10 and 11, 1904.

When a foreign body is lodged within the eye it must be removed as soon as possible after the accident. If lying on or imbedded in the iris, the lens being intact, it should be removed usually with the portion of iris to which it is attached. If it can be seen embedded in the lens and the condition of the eye be otherwise favorable, an extraction may be done with the hope of removing the fragment with the lens. If owing to its position the foreign body cannot be removed without destruction of the eye, the latter should be enucleated or eviscerated without delay.

Penetrating wounds of the ciliary region, the so-called dangerous zone, accompanied by prolapse of the iris and ciliary body, are, above all others, the most likely to cause sympathetic disturbance. Foreign bodies within the eyeball, and especially if they lie near the ciliary processes, are a constant source of danger. In case the foreign body be a particle of iron or steel, it can often be located quite accurately with the *x*-rays. Its removal may occasionally be accomplished by means of a strong electromagnet, either through the wound of entrance, more or less enlarged, or through a fresh wound made where the body is seen or believed to lie. While many cases are on record where foreign bodies, such as particles of iron, have remained in an eye for years without serious trouble, yet, sooner or later, the eye may be lost, and perhaps endanger the sound one. Even when a foreign body is removed from an eye early, there is still serious danger of the loss of the organ.

Sympathetic irritation is often an early symptom, but is sometimes met with in cases where the inured eye has been blind for a long time and is undergoing degenerative changes. The patient has difficulty in reading small print, and his eye soon gets tired; vision is occasionally blurred; a bright light produces discomfort; neuralgic pains dart through the head; and lacrimation becomes copious. These symptoms may or may not precede sympathetic inflammation.

The treatment and prognosis of all wounds in the dangerous zone are both difficult and uncertain. Cold applications and atropin should be used early unless the latter should be contraindicated owing to prolapse of the iris. A mild antiseptic lotion should be applied, and the eye lightly bandaged and protected from light. If the iris is protruding it should be carefully excised; if the ciliary body or choroid lies in the wound it should not be excised, otherwise the vitreous will escape. Small wounds often heal without difficulty, but much depends upon the introduction of septic matter into the eye either at the time of or after the injury.

Any inflammatory sign occurring in the wounded eye must be looked upon as a danger signal for this and for the well eye, and it must be remembered that when the second eye has been attacked by sympathetic inflammation it is too late for operative interference.

Large wounds which cause collapse of the globe and prolapse of its contents should be treated by enucleation or evisceration without delay.

The following rules may serve as a guide as to when to enucleate:

1. Enucleate when the injury is so severe that the eye is hopelessly destroyed.
2. Enucleate at once on the slightest sign of sympathetic irritation should the vision of the injured eye only equal perception of light.
3. Enucleate when a foreign body is present, and cannot be removed from the exciting eye.
4. Enucleate when an injured eye is blind and suffering from recurrent attacks of acute inflammation or when it is tender and irritable as a result of degenerative changes.
5. Do not enucleate when the wound is small, there is still sight in the injured eye, and when there is no sign of sympathetic disturbance in its fellow.
6. Do not enucleate when sympathetic inflammation is in progress, and there is still sight in the injured eye.

POISONING FROM A VAGINAL DOUCHE

H. C. Wood, Jr. (Amer. Medicine), reports a case in which a vaginal douche of 1:2000 corrosive sublimate solution not only caused severe local pain but systemic poisoning, with hematuria, albuminuria, epithelial cells and casts in the urine, painful micturition, pains in the loins, loss of appetite, puffiness of the face, slight elevation of temperature, and rapid pulse. The symptoms entirely disappeared under the use of diluents and uvaursa, when the douches were stopped.—Med. Standard.

A CASE OF GASTRECTOMY FOR CARCINOMA*

By E. F. Root, M. D.

SALT LAKE, UTAH

Mrs. C. G——, aged 54, American, married; youngest child 22; never had any serious illness until present attack. First saw her February 9th; she was at that time very much emaciated; had been unable to retain food for several weeks; complained of a great deal of pain in the region of the stomach. Had been in poor health for the past two years, but had not given up active life until about the time of her first visit to me, in fact she would not admit to her family that she was sick.

On palpation an apparently small tumor could be made out about the site of the pyloric end of the stomach. This was quite hard and somewhat nodular or irregular on the surface. I did not hesitate to diagnose gastric carcinoma, and advised operation as the only means of allowing food to pass. Also there was a possibility of removing the growth, and finally a complete disappearance of the symptoms. She was willing and rather anxious to have an operation done which I was able to promise would give relief in the way of getting food through the stomach, namely, gastro-enterostomy.

After the usual preparation of the skin and as good an evacuation of the bowels as could be obtained by enemata, the operation was undertaken.

Ether was used. On exploration it was found that the entire stomach was involved. The only places that looked or felt like normal stomach tissue was a place on the anterior wall, about the size of a dime, and another on the left side at the attachment of the gullet about one-half inch; the right side of the gullet was involved, or at least thickened entirely. There seemed to be no gland involvement or involvement of other organs. It seemed that gastrectomy was the only operation that could be done, and that conditions were rather favorable for success ultimately. The only unfavorable condition being the possible extension of the disease to the esophagus on the right side.

The operation was done as follows: The gastrohepatic omentum was divided between pressure forceps, thus loosening the stomach from above, except from the esophagus. Gastrocolic omentum was detached in the same manner, and the duodenum divided between forceps and closed by suture. The stomach was loosened from the esophagus by first clamping across the healthy-looking margin of tissue on the right side, leaving just enough tissue to sew to; on the right side the incision was right to the diaphragm, and this was closed across, thus narrowing the outlet of the esophagus somewhat. This was done not from choice, but it seemed to me a necessity. The jejunum, at a suitable distance, was then brought up, after ligating the cut vessels of the mesentery, and anastomosed with the esophagus along its healthy border. This was done by suture with chromic gut so that the cut edges and suture were inside. Next an anastomosis was made in the same manner of the ascending and descending portions of the jejunum about five or six inches from the union of the gullet. I attach great importance to this latter anastomosis and advise it in all cases of gastro-enterostomy. It affords egress of the fluids in the duodenum, namely, the bile and pancreatic fluid, as well as any food or drinks that drops into that side of the bowel. I believe it is the best means of preventing the so-called vicious circle.

This case healed at once; fluids were taken by the mouth within a day, and after the first week semi-solid food; after the second week a mixed diet was given, and a normal appetite developed. She eats and drinks as much as anyone of her size, but at times has what may very properly be called an "intestinal indigestion." This, however, is relieved by pepsin. The secretions seem normal; the skin is clear and bright, and she has nearly reached normal weight.

One week after operation, *x*-ray treatment was begun, and has been kept up since, with the hope of controlling any focus of infection. I shall continue this treatment for at least six months. Knowing that it will cure a cancerous growth of the surface, I hope by deep penetration to be able to control this.

I make no apology for reporting this case, as it is, I believe, unique. Seldom is a case seen that offers hope of success by operation, for by the time it is diagnosed almost invariably other organs are involved. I wish also to state that if diagnosis is made by touch, that is, if tumor can be felt, the disease has usually progressed so far that nothing can be done. Very little of the stomach or tumor can be felt through the abdominal walls, no matter how thin they may be, unless it is at the pyloric end. This is often demonstrated at operation.

---

*Delivered at the Utah State Medical Association, Ogden, Utah, May 10 and 11, 1904.

DISCUSSION

Dr. U. Worthington: This case is quite unique and very interesting, indeed. Before getting down to the case, I would like to say a few words on the subject of gastric surgery. It has been only the last few years that surgery in this section has been attempted and attended with any degree of success, and it is coming to the front in a very strong and marked manner, and I am glad to see that the members of the profession in Utah are not behind in keeping up with the work that is going on throughout the country.

This region offers as great an opportunity probably to the surgeon as any other zone of abdominal surgery. There is possibly as much good to be done in relieving suffering as in any other field in which we do work—in the pelvis, etc. So far as the operation of gastrectomy is concerned, I think it is doomed practically. If there is any case that justified it, this case certainly seems to be the exception, because the fatal termination of the case was inevitable and nothing short of complete removal of the stomach would give her any relief, or possible show for continuation of life, and that life without suffering. Probably many of these conditions that involve different portions of the stomach will justify a partial removal of the stomach and the surgery which is being done upon this organ at the present time. Partial removal of the stomach will be frequently and more generally done throughout the country than it has been done in the past. It is getting into the hands of all of us, and we are becoming familiar with that surgery, and are capable of doing it just as well as we do the rest of our work. The results in this case prove that his opinion and action were justifiable, and I am very glad, indeed, to have listened to the paper and very glad, indeed, to know that Dr. Root has met with such success in the case.

I am inclined to think that the loop Dr. Root makes in the gut is something that should take place in every gastrectomy. Thus communication is established between the ascending and descending intestine, in order to avoid what is known as the regurgitation of the bile into the stomach, causing at times vomiting, nausea, etc., and interfering with the action of digestion. This is not as universally adopted at the present time as I think it will be, and it is a matter now with which surgeons are becoming quite familiar. It does not take a great length of time to stitch the bowels together, and it will afford a great deal of relief to the patient. Of course, so far as the discussion of the paper is concerned, no objection that I can see could be brought to anything the doctor did in the case. The manner of attachment to the esophagus is about the only way he could have done it under the circumstances, and in order to give her some little portion of the bowel in which the food stuffs could rest when they were swallowed, the looping of that bowel made what you might term an artificial stomach.

Dr. H. D. Niles: I had the pleasure of being present at the operation, and I desire to take this opportunity of emphasizing all of the good things that appeared in the paper. It was done most successfully, and I would attribute a large part of the success to the dexterity with which the operation was done. I do not think it would be possible for all operators to attempt that operation; and succeed as well as Dr. Root did in this case. When we open the abdomen with the expectation of finding some disease in the stomach,—gastric ulcer or gastric cancer,—it is usually done in an exploratory manner, and in this case I frankly confess if at that time I had been confronted by the same conditions as he was that morning, I should have decided not to have gone on. I shall, however, profit by the operation of that morning and its subsequent results, and I think I should be tempted to make an effort to do as nearly as I could practically the same operation in a similar case.

THE HOSPITAL BULLETIN

ST. BARNABAS HOSPITAL

MINNEAPOLIS

A CASE OF DOUBLE CONGENITAL DISLOCATION OF THE HIPS

In the Service of Dr. J. W. Doyle

Operated upon by Dr. Frederick K. Muller, of Chicago

Florence S——, aged 6 years and 3 mos.; parentage Bohemian farmers. No other case in family.

The operation was that recommended and performed by Dr. Lorenz. It consisted in the breaking up and tearing down of all adhesions and muscular attachments about the joint, and forcibly replacing the dislocated member, after which the limbs are put up in plaster casts in an abducted position.

The time occupied by the operation was 1 hour and 40 minutes.

Result.—The results of the operation were not re-position, but transposition. The position was anatomically not correct, as it was found to be impossible to force the heads into an ideal position, but functionally the position was much improved.

After six days the child was able to walk. The plaster cast is to remain for 5 or 6 months, and then possibly re-applied for the same period.

The case should have been operated upon two or three years earlier, the more favorable time for operation being between the ages of two and one-half and four and one-half years.

Much depends upon the after-treatment, which should consist of active and passive motions, and massage which should be kept up for two or three years.

The operation teaches us that the hip-joint permits of far greater violence than we had ever been taught to believe possible.

AN UNUSUALLY LARGE OVARIAN CYST

In the Service of Dr. A. E. Benjamin

Mrs. D——, aged 64, mother of several children, has been quite well most of her life; her family history is good. Four months ago she began to notice some abdominal enlargement, and some pain was experienced in the left pelvis and the right hypochondriac region. She was referred to me by Dr. J. A. McLaughlin. An examination, July 12, 1904, revealed a cystic growth filling the pelvis and abdomen. It was quite freely movable, but seemed to be attached at the region of the left ovary. An operation was performed July 15th. The tumor was so large that a 12-inch incision had to be made. The growth proved to be a multilocular cyst, originating from the left ovary. It was not adherent nor attached, excepting at this point. It was removed without rupture. It weighed 19 pounds, and contained a thin serous substance. The wall of the growth was transparent. The divisions marking the various cysts within this wall could be easily seen. The patient's convalescent period was normal and without interruption.

ANOTHER PLEA FOR ACCURATE HISTORY-TAKING

Even at the risk of becoming tiresome the Bulletin wishes to make another plea to its readers in behalf of history-taking. Only recently an attempt was made to make a careful study of the gall-stone cases which had been treated at St. Barnabas Hospital in the past two years, but it was found to be utterly impossible to make even a beginning in such a study because of the worthlessness of the histories of the cases. The nurses do their part with accurate nicety, and could we but have a complete record of the history of the physical examination and of the exact conditions found at operation, no more satisfactory reports could be desired. It may be urged that this is supposed to be the work of hospital internes. That is undoubtedly true, but it is to be remembered that the newly graduated medical student has had but scant experience along these lines, and the likelihood of his overlooking many salient features is far greater than that of the attending physician, whom it therefore behooves to at least lend the benefit of his experience and skill in pertinent criticism and suggestion.

The advantage to the hospital archives would be incalculable, and the case-records, which are now of comparatively little value, would acquire a real scientific importance; in fact the importance of this matter would seem to warrant a paid assistant whose work should be to carefully examine and correct each chart before the patient was discharged from the hospital.

CLINICAL MICROSCOPY

Conducted by George Douglas Head, M. D.

EHRLICH'S DIAZO REACTION IN PULMONARY TUBERCULOSIS

Until within the last few years little attention has been paid to the study of Ehrlich's diazo reaction in any disease except typhoid fever, although Ehrlich stated in his original publications that the reaction was often present in the urine of patients with pulmonary tuberculosis. From a diagnostic standpoint the study of the reaction in phthisis is perhaps of very limited value. Arneill found it present in 42 out of 82 cases of phthisis. Michælis in 88 cases found the reaction in 63. Greene found it in 2 out of 16 cases.

The presence of the reaction in cases of phthisis is of considerable value in the prognosis of the disease. Arneill agrees with Michælis that in cases of pulmonary tuberculosis where the reaction is found continuously for some days the prognosis is grave. In 100 fatal cases observed by Clemens, 87 gave a diazo reaction. Of Michælis 88 cases, 63 gave a reaction and 25 did not; of the 63, 50 died in the hospital, 5 left unimproved, and only 6 improved. Of the 25 who gave no reaction, 20 improved, 1 left cured and 2 died.

Of Rutimeyer's 106 fatal cases 85 gave a diazo reaction.

Of Frænkel's & Troje's 13 cases of acute tubercular pneumonia, 11 gave a positive reaction.

That the reaction is not present in all the fatal cases is shown by reports from a number of observers.

In tubercular peritonitis Simon states that 25 per cent show the reaction. Michælis is of the opinion that death usually results in most of the cases of pulmonary tuberculosis within six months after the reaction appears. Simon lays down the rule that about 85 per cent of the cases of phthisis showing a positive reaction end fatally.

In this connection an interesting case was observed by the writer, showing the prognostic value of the Diazo reaction. The patient was a man in middle life with a continuous fever of a mild type, considerable prostration, and the signs of a tubercular involvement in his right apex. A difference of opinion arose among his consultants as to the role played by the tubercular process in the production of prostration and fever. The patient's urine showed a pronounced diazo reaction at many examinations, and this was suggested as a bad prognostic sign.

The patient died some three months later of an acute tubercular pneumonia.

NITRIC ACID TEST APPLIED TO URINE

Few medical men appreciate the knowledge which this simple test, properly applied, gives concerning the functions of the kidney and the metabolic processes taking place in the body. The test is as follows:

Pour 10 c.c. of urine into a conical glass; fill a pipette with conc. nitric acid, and plunging the pipette to the bottom of the conical glass allow the acid slowly to run out of the pipette, so that a layer of acid is formed below, above which floats a layer of urine. At the point of contact of the two fluids lies an intermediary zone in which a variety of color-bands and precipitates appears, which are well worth studying. If albumen is present in the urine a white ring will form at the juncture of the acid and the urine. The thickness of this ring gives a general idea of the amount of albumen present in the urine. In chronic interstitial nephritis the ring of albumen is rarely accompanied by a color-band. In acute and chronic parenchymatous nephritis and in the albuminurias of passive congestion a distinct color-band forms below the ring of albumen.

Uric acid, when present in increased quantities, forms a white, fluffy band up in the body of the urine, half way between the surface and the point of contact of acid and urine. The larger the amount of uric acid the thicker and more distinct becomes this band. In lithemic conditions, gastro-intestinal disturbances, acute infections and acute and chronic parenchymatous nephritis this band of uric acid is usually present.

If urea is present in large amount, a heavy spangled, irregular layer forms a little above the point of contact and gradually clouds down toward the acid. It is distinguished from the ring of albumen by its crystalline appearance, and the point where it forms. If the specimen is allowed to stand for some hours after the test is made, crystals of nitrate of urea will collect and form a layer along the sides of the conical glass.

Valuable information is also secured from a study of the color-bands which form when this test is made. Normal urine either forms no color-band at all or a color-ring of faint rose to brick color at the point of contact of acid and urine. If much indican is present a violet-colored ring forms in the urine just above the normal band of color.

Biliary pigments, when present, will produce a green band of color at the juncture of acid and urine. If some nitrous acid is added to the nitric acid and the test then made, a play of colors, beginning with red and passing through yellow, green, blue and violet, will be observed where bile is present.

The presence of urobilin is indicated by a mahogany-colored band, appearing in the zone occupied by the color-ring of the normal pigment

NORTHWESTERN LANCET

A SEMIMONTHLY MEDICAL JOURNAL

The Official Organ of the Hennepin County Medical Society

W. A. JONES, M. D..................EDITOR

Editorial Office, 515 Pillsbury Building

W. L. KLEIN, PUBLISHER

SUBSCRIPTION, $2.00 A YEAR.

839-840 Lumber Exchange....................Minneapolis

OCTOBER 1, 1904

POLITICAL ADVERTISING METHODS

A new method of advertising is disclosed in the race for political offices among the mighty men of medicine. Eleven physicians in the city of Minneapolis were on the primary ticket for nomination for congressman, mayor and coroner. Two wanted to be congressmen, three were anxious to show how, as mayor, they could run a large city, and six were willing to be coroner.

It is very evident that these doctors feel that there is a demand for their services in other fields than medicine. It is no disgrace for a professional man to aspire to political advancement. Indeed, it is a duty that everyone should respect, provided the office is within the capacity of the candidate. Physicians have been governors, senators, congressmen, and mayors, as well as having filled the lesser influential political offices.

To become a candidate the aspirant should have the necessary qualifications for the office he seeks. His training, association, and character may qualify him for any office in the country, yet such instances are comparatively rare when a high office is suitable for the physician who is interested in the science of medicine.

The average voter is inclined to look upon the average physician as an unsuitable candidate for an office that requires business acumen and executive powers. There are many physicians who are good business men, who can discriminate in important enterprises, and who, if given an opportunity, would develop a high grade of executive ability. On the other hand, the microbe of politics is apt to invade the tissues of the mediocre class of medical men, those who seek politics for purely commercial advancement. Among the candidates for coroner one was frank enough to admit his chances for the nomination were not at all good, but he said, with the same frankness, that a political campaign gave him an opportunity to meet people that he might never approach under other circumstances. It widened his acquaintance, and incidentally brought him business.

Every physician of experience knows that such acquaintances are looked upon as transient in the majority of cases, and that patients acquired in this manner are usually undesirable. In some instances, however, a more fortunate outcome may be the lot of the physician. An emergency case of importance may bring, either directly or indirectly, large returns.

When medical men rush into politics for commercial reasons alone, knowing that the nomination will fail, the effort is not commendable. The dignity of the individual suffers in the end, and it requires much time to recover from the faulty application of a supposed business hoped-for proposition.

A medical man in congress is very desirable for many reasons. Such a candidate should stand high in the profession, and he should be experienced in national medical affairs, and have a broad educational view-point. Unless a medical man is fully qualified he should give way to the business man of affairs. Minneapolis has had some experience with a medical man in the mayor's chair. The advertisement has gone broadcast without a creditable return. What would the next man do?

The strife for coroner has degenerated into a run for office. In the earlier days in the history of Minneapolis the office of coroner was looked upon with respect, but doing the last few years the office has lost much of its dignity, not from the occupant of the chair, but from the feeling that the office is superfluous. In the eastern states the office has been abolished, and the business transacted from the county attorney's office, where it belongs. Physicians are appointed for the special work for which they were fitted, and the legal department conducts the investigations.

REGENERATIVE CHANGES IN VISCERAL ORGANS

The theory has been generally upheld that when a chronic progressive disease invades one of the great organs of the abdomen, destruction or degeneration of tissue follows with the formation of scar-tissue if the disease processes become quiescent.

The liver, stomach, and kidneys are the seat of diseases which advance with progressive destruction of the organs. This is the case in many of the malignant processes. On the other hand, these organs are often the seat of acute inflammations with partial destruction with or without repair. It is evident that focal invasion of inflammation may occur without appreciably impairing the function of the organ involved.

An acute nephritis may destroy many of the epithelial cells and, at the same time, stimulate the remainder of the mass, and thus regenerate the kidney to such a degree that it will carry on its work without marked delay.

That such changes may occur in the stomach, no student of pathology will question. Who has not diagnosed benign diseases of the stomach-wall with all the evidences of new growth and thickenings with restoration of function, and possibly repair to the degree of practical or complete recovery.

Dr. W. G. MacCallum, in the Journal of the A. M. A. for Sept. 3, 1904, has an admirable paper on "Regenerative Changes in Cirrhosis of the Liver," in which he discusses the ordinary type of inter-lobular cirrhosis. He defines cirrhosis of the liver as "a chronic disease in which destructive processes, probably often repeated, result in a loss of the functional liver tissue immediately followed by the formation of a scar, the healing process, and, later, by an attempt at the restitution of the liver to normal by regenerative processes." The repair takes place, according to Marchand, in three ways:

1. By hyperplastic proliferation of the larger intact remains of the gland parenchyma.
2. By proliferation of isolated liver clumps or remains in the region of the most intense destruction.
3. By proliferation of the interacinous gall-ducts which, in conjunction with the latter, form new liver cell strands.

If the author's conclusions, quoted below, are correct, the prognosis in many cases of cirrhosis of the liver will be modified; at least, the life of the patient will be prolonged under a fair regime and proper therapeutic measures. The average case of simple cirrhosis uncomplicated by chronic passive congestion, tuberculosis, syphilis, tumors or abscesses, in suitable environment may recover to a comfortable degree and live to old age.

Dr. MacCallum's conclusions are as follows:

> In conclusion we may state that in the ordinary type of interlobular cirrhosis there is a primary destructive process leading to the disappearance of portions of the cell mantle surrounding the central vein of each lobule. The framework of the lobule persists but usually collapses, and there is produced an irregular lobular mass in which the central vein is in places left more thinly covered by the radial strands of liver cells, or even completely exposed and surrounded only by the connective tissue framework. The remaining liver cells proliferate rapidly by mitosis and generally increase the size of the portion of the lobule which is left. In this process they sometimes assume temporarily almost the form of bile duct cells. The connective tissue bands which run through the liver and separate these irregular hypertrophied remains of lobules consist of preexisting connective tissue together with some which is newly formed. Numerous bile duct-like canals course through these bands and it is thought that these are produced by proliferation from the preexisting bile ducts. The degeneration of compression of liver cells in the production of this appearance is not thought to be of importance. That the canals are composed of proliferating cells is shown by reference to a fresh case in which mitoses were abundant in their walls and by the fact that they frequently sprout out to form isolated bulbous masses of new liver cells. The bile duct epithelium and the liver cells are shown throughout these processes to be equivalent so far as the regeneration of the liver tissue is concerned.
>
> The anatomic picture presented by a cirrhotic liver is, therefore, usually one in which the regenerative processes are the most striking, the destructive process being sometimes evident, sometimes entirely past and represented only by the widespread scars.

A HOSPITAL FOR THE AGED AND INFIRM

The judges of the probate court of Minnesota met at the capitol, September 1st and 2d. Among the topics discussed was the establishment of a hospital for chronic cases, in which dementia or mental enfeeblement is the chief symptom. The state hospitals for the insane are not prepared, nor is it their province, to care for a multitude of old people who are paralytic and mildly demented. Such cases are harmless, and in the state institutions they occupv the room that should be given over to acute cases or to those who are dangerous while at large. Such cases cannot be cared for in private families with safety to themselves or others.

The class of patients who are to be provided for, are those who are absolutely harmless, yet who need restriction, as well as care. Many old people of this type are the victims of senile changes, who became a burden in the home, and frequently are sent adrift by inhuman relatives, or those who drift away through their dementia. These cases are not suitable for the average county poor-farm, for the average county fails to provide, or is unable to do so on account of lack of funds, a sufficient number of attendants or servants for their care.

Every large county in the state should maintain such an institution at the expense of the county. The state should not be called upon to provide such an establishment. It would unnecessarily multiply state institutions, and would be an additional feeding-ground for the office-seeker and patron, with the additional disadvantage to the inmate. The legislature should be urged to pass a law requiring the county to provide for this class of unfortunates, under the supervision and protection of the Board of Control.

Physicians in the country, as well as the cities, are requested to advise with their representatives in order that the necessity and importance of such an institution may be understood. If the large counties are prepared for this establishment, provision may be made for those cases residing in smaller counties when no such hospital is possible. Those counties permitted to pay a per capita cost for the care of their applicants would reduce the expense of both county and institutional care.

Minnesota is slow in developing its institutions. The state is behind many other states in hospital accommodations, and the legislature cannot be urged too strongly to accede to these suggestions.

NERVE STRETCHING IN THERAPEUTICS

Bloodless nerve stretching by Lewandowski in Therapie der Gegenwart, Berlin, is a very helpful and suggestive article as it opens up the question of the benefits of massage, Swedish movements, osteopathy, and kindred exercises.

The author of this paper treats certain neuralgic and trophic affections by systematic stretching of various nerves by flexing and twisting the joints. These exercises are continued for weeks with severe daily repetitions, Old sciatica is rapidly cured, and the distant effects on remote troubles has been surprisingly beneficial. Exercises of the trunk and legs, and stretching of the sciatic nerves have been helpful in neurasthenia.

Of course this information is not new: it is the repetition of suggestions for exercise in some form to benefit the human race with its aches and pains. The large majority of resulting pains which follow diseases or functional disorders are tag-end effects of deficient metabolism. Another source of pain is that due to autosuggestion, purely mental hence curable by suggestion and commonsense methods.

The number of recoveries from known and unknown diseases that have been brought about by kinetotherapy is very large, yet many remain uncured because the physician prescribes drugs instead of muscle work. These recoveries also explain why the people flock to muscle operators; it is new, diverting, and positively helpful,—a pleasurable form of treatment. The special exercises which stretch large nerve-trunks are overlooked by the masseur, are more in evidence by the Swedish movement worker, and can be more attentively agitated by the physician who gives special instruction to the operator.

The medical schools are waking to the necessity of special instruction and training, and the general hospital provides competent teachers on this branch for the nurses undergoing training.

The profession generally is more alive to the benefits of kinetotherapeutics, but is still asleep as to its more extended usages.

CORRESPONDENCE

St. Louis, Mo., Sept. 16, 1904.

Editor of The Northwestern Lancet:

If you would like to be busy once, let me suggest that you attend three conventions at one time, as I have been doing in the case of the American Electro-Therapeutic meeting at the Inside Inn, the American Röntgen Ray society at 48th street and the Electro-Therapeutic section of the International Electric Congress at 13th street, in this city.

Monday morning was spent at the *x*-ray society. The time was very valuably filled by a symposium on the treatment of malignant diseases. Dr. C. L. Lenard, of Philadelphia, read a paper on cancer of the breast, followed by Dr. R. H. Boggs upon the technique of treatment. Then twelve men gave summaries of cases, followed by a general discussion. The general opinion was that delay is dangerous, that every case should have about twenty treatments after an operation, that atrophic scirrhus of the breast should not be operated upon, but should be treated by the *x*-ray, and that result of treatment depends largely upon the skill of the operator. Dr. Burdick of Chicago, reported 34 cases of sarcoma with 14 symptomatic cures and 9 cases improved. He says that sarcoma should not be operated on as he has never cured a recurrent case. Other men reported symptomatic cures of several cases of sarcoma, but no one claimed that the majority could be cured.

I was deeply interested in Dr. W. J. Morton's account of his experiments with the use of fluorescent drugs given internally in connection with the *x*-ray treatment. The fact that he had two skiographs of the hand taken in exactly the same way except that in one case the man had taken fluorescine a short time before the exposure was made, and that the latter picture brought out the details much more clearly, would seem to show that this method may be a distinct advantage in the use of the *x*-ray therapeutically. He showed a dozen different drugs; among them, quinine, uranine, stramonium, and other familiar drugs. He tried quinine first, and still uses it. Some of them produce no physiological effect in the body.

Dr. Grubbe has been using stramonium salicylate for the same purposes, but he applies it locally on open sores, or injects it hypodermically into tumors.

I was very much disappointed in the display of our *x*-ray and phoo-therapeutic apparatus of the World's Fair.

Very truly,

W. P. Spring, M. D.

BOOK NOTICES

Von Bergmann's Surgery. A System of Practical Surgery. By Drs. E. von Bergmann, of Berlin, P. von Bruns, of Tubingen and J. von Mikulicz, of Breslau. Edited by William T. Bull, M. D., Professor of Surgery in the College of Physicians and Surgeons (Columbia University), New York. To be complete in five imperial octavo volumes, containing over 4,000 pages, 1,600 engravings and 110 full-page plates in colors and monochrome. Sold by subscription only. Per volume, cloth, $6.00; leather, $7.00; half morocco, $8.50, net. Volume III just ready. 918 pages, 595 engravings, 21 plates.

Subscribers for this great work of von Bergmann and his German confreres are delighted at the reception of each new volume.

Vol. III, "Surgery of the Extremities," is now at hand. Three chapters are devoted to the shoulder, and four to the upper arm. The strength of the American edition is apparent in the chapters about fractures in the many fine illustrations from Scudder. Other than the grosser lesions are duly considered, so that one consults these chapters with satisfaction. The judicious quality of the volumes is shown in the discussion on the treatment of fractures about the elbow.

A number of skiagraphs of Colles' fracture are given. By the way, the *x*-ray photos alone, and not the fluoroscope, should be depended upon if additional aid in diagnosis is needed. Inflammations of the hand are treated fully from the standpoint of infection and anatomy.

The last two-thirds of the volume is devoted to the lower extremity—very fully on the hip fractures, the interesting and common flat-foot, and on the orthopedics of the foot.

Three pages and an illustration are given the Lorenz method for congenital dislocation of the hip, allotted first place.

"The question as to conservative or operative treatment of the tuberculosis knee-joint is still unsettled." Alas, true still of all tuberculosis regions.

Immobilization and iodoform injections are lauded.

There would have been an advantage in including a consideration of the relation of amputations to artificial limbs, that must now be looked for elsewhere. We note, also, absence of the troublesome bunion. Soldthwaite's transplantation of tendons is nicely illustrated. Translator and publisher have both done their work well. Altogether these volumes are of the literature that every surgeon feels he must have.

A Reference Handbook of the Medical Sciences. Edited by Albert H. Buck, M. D., New York City, New York: William Word & Company.

We are pleased to see the last volumes of Wood's "Reference Handbook," thus completing a second carefully revised edition of a work, the first edition of which we have often consulted with comfort and profit, and seldom, indeed, without finding what we sought.

It is a library we have found full, compact, accurate, and, through the references appended to each article, leading handily as far as one may wish to go. In Vol. VIII the index alone covers eighty-four folio pages, and we have calculated that there are here some 3,000 titles entered, while of subtitles there are an hundred-fold more.

The field of medicine is well covered in these really valuable volumes.

Regional anatomy is strong and well illustrated. The 67 broad pages on the stomach, by Martin and Fry, is almost a treatise. It is brought well down to date, including the recent studies of Mallory, with a beautiful plate on the protozoa.

The scientific side of medicine is not neglected, as witness the six pages devoted to Ehrlich's side-chain theory.

After much use of this work, we do not hesitate to advise a young medical man to invest in these volumes, sit down to them every day, and add to them very charily. They will prove a sound investment or time and money.

REPORTS OF SOCIETIES

HENNEPIN COUNTY MEDICAL SOCIETY

F. A. Knights, M. D., Secretary

A stated meeting of the Hennepin County Medical Society was held September 5th in the society's rooms in the Andrus Building, Dr. C. H. Hunter, the president, in the chair.

The application of Dr. John F. Phelan was read and referred to the Censors.

The transfer card of Dr. S. H. Van Cleve from the Stearns-Benton society was read.

The Majestic Building Company presented a propostiion whereby the society might secure a home for the next five years, and on motion of Dr. Head the Board of Trustees, with the president and Dr. J. W. Bell, were instructed to investigate.

The election of a librarian was on motion postponed until next meeting.

Dr. P. M. Hall, Health Commissioner, read a paper entitled "A Short History of Diphtheria in Minneapolis." Dr. J. F. Corbett read a paper on "The Prophylactic Use of Antitoxin."

These papers were discussed together by Drs. C. W. Williams, Wesbrook, Bracken, and Green, the discussion being closed by Dr. Hall and Dr. Corbett. The society then adjourned.

NEWS ITEMS

Dr. C. G. Hoff, of Zumbrota, has moved to Easton.

Dr. W. C. Nolte, of Chicago, has located at Denhoff, N. D.

Dr. E. H. Kerkhoff, a Hamline graduate of '98, has moved to Bowerville.

Dr. E. A. French, State University, 1903, has moved from Breckenridge to Campbell.

Dr. O. S. Swenness, of Lawrence, Wis., was married last month to Miss Sevira Johnson, of the same village.

Dr. W. R. Morrison has resumed his practice in Bemidji after spending several months in special work in Chicago.

Dr. C. E. McCauley, of Aberdeen, S. D., has resumed practice after a year's absence from his office on account of poor health.

Dr. H. H. Hazeltine, of Ashland, Wis., has located in Anoka. Dr. Hazeltine was graduated from the State University in 1900.

Dr. W. J. Awty, a State University graduate, practicing at Moorhead, was married last month to Miss Ethel Lord, of Charleston, Ill.

Dr. Ludwig Lima, a Hamline graduate, who has spent a year in the City and County Hospital of St. Paul, has located at Montevideo.

Dr. H. P. Ross, of Campbell, feels obliged to move to a milder climate, and therefore has sold his practice, and will soon locate elsewhere.

Dr. A. F. Moynihan, a 1903 Hamline graduate, has located at Sauk Center. Dr. Moynihan spent a year in St. Joseph's Hospital, St. Paul.

Dr. Theodore Tennyson, of Appleton, has sold out his practice and moved to Minneapolis, entering into partnership with his brother, Dr. Falk Tennyson.

Dr. C. E. Johnson, who recently bought the Appleton Hospital, which is a private institution, proposes to open it to all physicians, thus giving Appleton a public hospital.

The Commercial Club of Albert Lea has taken up the subject of a public hospital for that city, and funds will be raised to carry out the plans of the physicians who see the needs of the city.

The people of Madison propose to raise by subscription $5,000 for improvements in Ebenezer Hospital, which now occupies a good building and is an institution that is a credit to the city.

Dr. W. H. Seelye, of Dubuque, Iowa, has been practicing in South Dakota for a number of years as an itinerant physician. Last month he was arrested under the new medical practice act, and concluded he would not fight this law. He abandoned the field, but no doubt only to begin again in greener pastures.

PRACTICE FOR SALE

I will sell for $250 a $1,500 practice in thriving village in best part of Minnesota; office furniture, including operating chair; good 4-year-old horse and buggy; free office rent; no opposition. Address C., care of NORTHWESTERN LANCET, Minneapolis.

FOR SALE

The books and book-cases and the surgical instruments and instrument-case of the late Dr. W. H. Hanscom will be sold at very low prices. Information may be had by writing or calling upon Mrs. W. H. Hanscom, 601 19th Ave., So., Minneapolis.

GOOD OPENING

There is a good opening for a young, unmarried physician in a centrally located office in a growing city of Minnesota. Several good appointments can be transferred. Office furniture, instruments, etc., for sale at $200. For further particulars, address A. R. F., care NORTHWESTERN LANCET.

POST-GRADUATE WORK

DOCTOR: If you want practical post-graduate work during fine season in the delightful city, write for particulars. NEW ORLEANS POLYCLINIC P. O. Box 797, New Orleans.

OPERATIONS IN DIABETIC PATIENTS

There is a well-marked antithesis to operating on patients afflicted with diabetes, and it is widely believed that sloughing in an operative wound is to be expected. C. P. Noble (American Medicine) believes that this view had its origin in the fact that most operations undertaken in diabetics were for gangrene and therefore does not form a fair criterion. The author has operated on seven women suffering from diabetes mellitus, six of which made good recoveries and the other died from coma on the sixth day after operation. All were major operations and to this number the author has added 62 cases collected from the literature. The total showed a mortality of 24 per cent, about half of which died from diabetic coma after the operation, but the operative results were good. The rule to which the author adheres is that operation is postponed if there is more than two per cent of sugar in a total excretion of three pints daily. In all cases preliminary treatment by strychnine and codeine was followed. This was also given after operation in addition to free use of salt solution per rectum and under the skin. The counter-indication to operation is strongest in those patients suffering markedly from the constitutional symptoms of diabetes—poor nutrition, wasting, intense thirst and morbid appetite.—Medical News.

NORTHWESTERN LANCET

A Semimonthly Medical Journal

VOL. XXIV OCTOBER 15, 1904 No. 20

TREATMENT IN DIABETES

By LeRoy Crummer, B. S., M. D.

Professor of Medicine, Creighton Medical College, Attending Physician St. Joseph's Hospital, Etc.

OMAHA, NEB.

The literature concerning diabetes has always been voluminous, and with the researches and new theories concerning the disease process which have been brought forth within the last few years, and the amount of written work on diabetes, it has become so great that it is practically impossible to keep track of it. Yet, however much we, as practicing physicians, may be interested in these theoretical considerations, our duties to our patients require our interest to be directed chiefly along the lines of alleviating their diseased condition, and it is from this standpoint alone that I wish to consider diabetes.

We cannot base a diagnosis of diabetes on the mere presence of sugar in the urine, or perhaps I should say that in our diagnosis it is not sufficient to say *diabetes,* but we must go much further and by a careful, exhaustive history, a complete physical examination, and a repeated qualitative and quantitative examination of all the urinary substances, determine the true condition of the patient and the exact degree of impairment of the power of metabolism. We no longer content ourselves with a diagnosis of Bright's, but try to determine the exact condition of every organ in the body in these cases, and it should be so in diabetes. No two cases of diabetes are alike, and each case must be carefully investigated. to determine the smallest details. In the urinary examination we must daily examine the total 24 hours' urine for amount; specific gravity; sugar, calculated by percentage and total amount, by the reduction test, and if possible with the polariscope; acetone, quantitatively; urea or total nitrogen, quantitatively; albumen as well; and we must carefully compare the results of the polariscope and Fehling's examination, as the difference gives us an idea of the amount of the levorototary oxybutyric acid present.

Crofton, following von Noorden, has divided diabetes arbitrarily into three classes, in which, we must confess, there is no sharp line of demarcation: First, those cases in which the withdrawal of carbohydrates alone suffices to render the urine free from sugar. These are the mild cases. Second, cases in which we must not only deprive the patient of the carbohydrates, but also reduce the proteid content of the diet to such a point that less than 18 grammes, but more than 10 grammes, of nitrogen appear in the urine. These are called the moderately severe or medium form. Finally, the severe form in which the withdrawal of the carbohydrates and a large proportion of the proteids is not sufficient to render the urine sugar free. These different forms merge one into the other, or indeed the character of the disease may change, so that a mild case rapidly becomes severe, or under treatment a severe case may be benefited to an extent which our previous experience had led us to believe impossible.

In consideration of diabetes we must not limit ourselves to the mere percentage or total amount of sugar excreted. In general this point is really of comparatively minor interest. There are two things at least of greater importance in all cases of diabetes: First and foremost is the strength and weight of the patient, and I may say that any form of treatment which diminishes the weight and lessens the strength of the individual is bad treatment. Of no less importance is the condition of the urine with regard to the excretion of the so-called acids, acetone, diacetic acid, beta-oxybutyric acid. If our case is found to be free from these elements we must carefully avoid their production, as is so quickly done in many cases under a strict carbohydrate free diet order. If these acids are unfortunately present they render the prognosis much more serious, and treatment must be instituted which will cause them to diminish in amount and to disappear if possible, and this must be attempted even if for a time the sugar excretion should increase.

In the past we have been in the habit, in these cases, of assuming that all carbohydrates were equal in their food value, and the same has been considered true of various forms of proteid food. There is, however, considerable experimental evidence going on to show that following definite equal amounts of various forms of sugar or starches different amounts of dextrose will appear in the urine; in other words, certain sugars and starches are better retained, and therefore of much more food value in the individual case. The same is also true of proteids, but in perhaps a less degree. In this one point lies, perhaps, the secret of success in the treatment of these cases. The interesting reports concerning oatmeal cure, potato cure, yeast cure, etc., in the hands of certain men, may perhaps be explained on the basis of coincidence, each observer having had a series of cases in which a certain form of carbohydrates was well borne.

It is not sufficient to render the case sugar free, but is also necessary, by very careful investigation of the individual case, to calculate the least restricted diet upon which the case will improve. By dietetic experiments under control of daily exhaustive urinary examinations we determine the diet containing the largest amount of starchy food which will not increase the previously found minimum excretion of sugar. At the same time this must be a diet which will prevent or diminish the production of the acid series, and allow the patient to gain in weight and strength.

The diet must be figured on body weight and caloric value of the food stuffs according to the following table:

Carbohydrates	4.1 calories per gramme
Proteids	4.1 calories per gramme
Fats	9.3 calories per gramme
Alcohol	7.0 calories per gramme

Alcohol is of much importance in the diabetic diet, on account of its high caloric worth, and is an excellent substitute for fat, which becomes very objectionable in many cases, on account of its preponderance in the diet. When in the severe or medium cases the proteids must be cut down, alcohol is indispensable. In the form of whiskey or dry wines alcohol is very well tolerated by most diabetics. The body under normal conditions requires from 30 to 50 calories per kilogram of weight, according to the amount of exercise taken.

In building a diabetic diet it is necessary, first, to reduce the bodily activity so that the caloric demand will be as small as possible, consequently we figure that with proper rest we can compute on a basis of 35 calories per kilo of body weight. Second, we must calculate an additional number of calories to make up for those which are in the sugar when it passes through the body without liberating heat or energy. Practically only the very severe and rapidly fatal cases excrete all the sugar ingested, but, on the other hand, even in the medium cases a certain amount of sugar may be excreted regardless of a strict carbohydrate free diet.

While the source of this sugar so excreted is yet the subject of theoretical discussion, we do know that a common accompaniment of this form of sugar is the production of the acids and their excretion in the urine, a thing which I have shown is strongly to be feared. For this reason we must never make an abrupt withdrawal of all forms of carbohydrates, but in selecting our diets we must furnish a certain amount of carbohydrates of that form which experience has taught us is best retained. In a large majority of cases carbohydrates furnished by oatmeal and fresh, green vegetables are very well retained, and these can with safety be made a component part of our diet. These food-tuffs have a further use in that in the presence of carbohydrates proteid material is better oxydized, and there is less tendency for the formation of the acid series. I will later show that while the presence of oatmeal and green vegetables in the diet has little or no effect in increasing the sugar, it has a great effect in diminishing the amount of acetone present. As an example calculating the proper diet let us take the following case:

Male, aged 27; weight 65 kilo; calories required at 35 per kilo equals 2275; urine 5500 cc., containing 5 per cent sugar. Total amount 275 grammes, equals 1127.5 calories lost; hence the diet must contain 3400 calories plus, which was supplied as follows:

Butter 250 gms., which gives	2325 calories
Proteid 100 gms., which gives	410 calories
Oatmeal 200 gms., which gives	410 calories
Alcohol 50 gms. in 120 cc. Scotch whiskey	350 calories
Total	3495 calories

Each day the diet must be reconstructed. This case, after two days, excreted 100 gms. of sugar, a loss of 410 calories, with the same weight; hence our diet must contain 2425 plus, 410, or 2835 calories; and dropping the alcohol, with the other things the same, we have a calorie worth 3145, which is sufficient to maintain waste, and leave a balance to be stored up as increased weight.

When this careful dietetic treatment is carried out, it is surprising how little symptomatic treatment is required. Almost at once, in my experience, constipation has been relieved, the various nerve symptoms disappear, the itching has stopped, and the thirst is diminished.

The gravest danger in all cases of diabetes is coma, probably over 50 per cent of severe cases dying of coma. The presence of diacetic acid must always put us on our guard, but, nevertheless, I have seen cases in which the diacetic acid has disappeared after once being present, and I have seen other cases which have carried a large amount of diacetic acid for from two to six months, without the production of coma.

The treatment of coma itself is exceedingly difficult, and while a few cases are recorded in which recovery has occurred for the time being, the cases have generally relapsed into fatal coma within a few weeks. Consequently our treatment of coma should be entirely prophylactic and anticipatory. As I have said before, whenever acids are present in the urine carbohydrates must be allowed in the diet, and in addition we must administer bicarbonate of soda in large doses, 25 to 50 grammes per day being the usual dose. A case which develops sudden weakness, signs of prostration, and changed mental attitude, with headache and deep breathing, should always be regarded as on the verge of coma, and proper treatment immediately instituted. This treatment consists in an immediate change of diet to one very free in carbonates,—beer, sweet liquors, sweet champagne,—in order to quickly inundate the system with carbohydrates which aid in promoting proper proteid metabolism. For the coma itself dextrose injected into the rectum, bicarbonate of soda, intravenously or by hypodermoclysis, and the intravenous injection of the solution of levulose, will do all that it is possible to do in these cases.

I wish to report and analyze two cases in order to show the method of working out these cases.

Case I. G——, aged 50, weight 250 lbs., had felt badly for six weeks, during which time he has lost 43 pounds in weight. Has been thirsty for a number of years, worse for two or three months. Has always been an excessive sugar eater. At the beginning of his trouble he estimates that he was passing seven to ten thousand cc. of urine. Analyzed sample showed a specific gravity of 1,040 to 1,045. The urine was reported to contain sugar, but no quantitative examination was made. He made the cure at Excelsior Springs and returned, but still continued to have considerable physical weakness; no power of mental application. During this time he was put on a strict diet. On August 12th he passed 1200 cc. of urine with a trace of sugar, no acetone, no diacetic acid; urea 20.4 gms. His dietetic requirements were 4900 cc, which were supplied as follows:

600 gms. proteid, equals	2460 calories
250 gms. butter, equals	2325 calories
50 gms. carbohydrates in 1000 gms. green vegetables	200 calories
4 eggs	200 calories
1 ounce cream	15 calories
Total	5200 calories

The question in this case was the determination of a diet containing as much carbohydrates as possible without the production of an appreciable amount of sugar.

A week of careful dietetic rest showed that we could put him on a diet which would contain, in addition to the diet above mentioned, 1x50 gms. of starchy food, but not 2x50; hence he is allowed daily the equivalent of 50 gms. of white bread. Under this diet his strength and mental application have rapidly improved. This case was of the mild form.

CASE 2. F——, aged 27; illness specifically noticed six weeks before. He had the usual symptoms, including itching of the skin and impairment of eyesight, and had lost 30 pounds in weight. Under medicinal treatment he became constipated, had a coated tongue, unable to work. The first example given was the dietetic requirements of his case. The further course of his disease is important and interesting.

Averages:

—— for treatment 5500; sp. gr. 1,032; sugar 5 per cent or 275 gms. Acetone, 9.5. Urea, 3.2. Weight, 139 lbs.

Four days on oatmeal, plantose, and butter.

3940; sp. gr. 1,027; sugar 2.7 per cent; 100 gms. Acetone, 5.49. Urea, 29.

Five days on fresh vegetables plus butter and meat.

2480; sp. gr. 1,022; sugar 5 per cent; 11.1 gms. Acetone, 3.61. Urea, 22.

Five days on oatmeal, butter, and plantose.

2290; sp. gr. 1,030; sugar 1.5 per cent; 32.2. Acetone, 2.3. Urea, 19.5. Weight, 142 lbs.

Again resuming green vegetables, meat, eggs, and butter.

2000; sp. gr. 1,017; no sugar. Acetone, 1.2. Urea, 18. Weight, 150 lbs.

A trace of sugar appearing only when an attempt was made to give starchy food.

The same diet continued two weeks, with the urine averaging 1800 cc., sp. gr. 1,020, with no sugar. Diacetic acid re-action continued present, but the acetone was less than .5 gm. per day, and the urea came up to 28 gms. per day. At the end of six and one-half weeks' treatment the acetone disappeared, and the diacetic-acid test, previously positive, became negative.

As we analyze this table we find that at first upon an oatmeal diet the amount of his urine and the percentage of sugar rapidly diminished, and that the acetone immediately became less. On vegetables the urine again diminished in amount, the sugar practically disappeared, and the acetone continued to diminish. The case, when put back on oatmeal, showed sugar in appreciable amount, but the acetone diminished more rapidly. When put on the green-vegetable diet the sugar disappeared, and the acetone steadily diminished in amount. The case is now on a diet which allows great latitude, and as long as excessive starch is kept out of the diet no sugar appears, and the patient feels well and strong, and is gaining constantly in weight.

The further treatment of the case will consist in periodically making a careful and extensive urinary examination, and an attempt to add starch in given amounts to the diet in order to determine if the starch-retaining power returns, as we know that there is a tendency in these cases usually to an improvement in the power of retaining starches.

To sum up the points that I have tried to make in the treatment of these cases, I wish to say that the treatment of diabetes requires, not only the closest attention to details on the part of the physician, but also absolute obedience on the part of the patient. In the severe cases a single dietary indiscretion on the part of the patient is just as dangerous as a single slip on an unsplinted leg with an ununited fracture. We must be careful to institute no treatment that will favor the production of the acids and the ensuing danger of coma. As a third consideration we must reduce, or cause to disappear, the dextrose in the urine. All this is done by calculating the proper diet for the individual case,—one that does not contain too little carbohydrate, for there is the danger of acid production; nor too much, for then there is the danger of further impairing the already diseased sugar-retaining power.

I have not attempted to quote authorities for the statements and ideas I have given here. They are none of them original, but are in the main the application of the work done by Ebstein, von Noorden, Crofton, and others who have been doing the most work along these lines the last few years.

EMBOLISM OF THE AXILLARY ARTERY FOLLOWING CHRONIC ENDOCARDITIS, WITH REPORT OF A CASE*

By George E. Sherwood, M. D.

KIMBALL, MINN.

Embolism, says Pruden, is the stoppage of a blood vessel by the arrest in its lumen of some material carried along in the circulating blood. The substance causing the obstruction is called an embolus. Emboli may be composed of a great variety of substances, such as detached portions of thrombi, fragments of heart valves and tumors, droplets of fat, masses of bacteria, etc.

From a pathological and clinical standpoint the direct effect of an embolus depends to a marked degree upon the vessel occluded and the character of the occluding embolus. If the artery occluded has a great many branches that anastomose freely with other vessels beyond the point of stoppage a collateral circulation is often readily established, and no serious results follow, but if it be a terminal artery having no branches to anastomose with other vessels we have to meet a much more serious proposition. When a terminal artery is occluded by an embolus the tissue of the affected region usually dies, there may be an extravasation of blood by diapedesis and a darkened solidified area corresponding to the region normally supplied by the occluded vessel is formed, which is termed a *hemorrhagic infarction*. This infarction may undergo a degenerative process, and we have a mass of cicatricial tissue remaining, which is occasionally pigmented. In another variety of cases the tissues undergo necrosis, and the affected area is usually of a lighter color than the surrounding tissue. This is called a *white infarction*, and may persist for a long time.

If the embolus contains infectious material we may have gangrene and abscess formation resulting. Embolic infarctions most frequently occur in the spleen, kidney, brain and lungs, but occasionally occur in other regions of the body. Embolism of the larger arteries is fortunately a rather rare condition, while that of the smaller arteries and arterioles is not infrequent. Embolism of the smaller vessels of the brain is frequently met with, especially in chorea, in fact it occurs so often in this disease that some authorities claim that chorea is caused by cerebral embolism.

Embolism of the arteries of the extremities is rare, but if found at all it occurs most frequently in the brachial and axillary arteries, which are occasionally obstructed by an embolus from the heart.

In embolism of the axillary and brachial arteries, unless the obstruction is immediately removed gangrene of the forearm results. If a main artery is obstructed by an embolus and collateral circulation is not immediately established gangrene will surely follow.

The most unfavorable anastomoses are those where the common femoral and axillary arteries are blocked. In embolism of a large artery the collateral circulation takes some time to develop itself; hence the sudden arrest of circulation in a large artery is more liable to be followed by gangrene than the gradual arrest of circulation. The symptoms of occlusion of a large artery of an extremity by an embolus, are sudden severe pain along the course of the vessel, coldness of the extremity, numbness, etc., with the gradual formation of gangrene. If the circulation is not very soon reëstablished by anastomosis or removal of the embolus, the treatment of embolism is very unsatisfactory, and there is no therapeutic or surgical measure that may be resorted to that has the least effect in promoting the disorganization of the occluding embolus. In embolism of the axillary, brachial or femoral arteries the extremity should be moderately elevated, and warm fomentations applied to the affected parts, so as to favor the renewal of the blood supply to the parts by collateral circulation.

In a large proportion of these cases, however, our efforts along this line will be entirely futile, and we soon have a case of dry or moist gangrene to contend with. In these cases of gangrene the wisest plan is to wait a few days for the line of demarcation to form before resorting to amputation, provided, however, the case is not septic, for in septic cases it is advisable to resort to surgery earlier and not necessarily wait for the line of demarcation to form. In amputating be sure to amputate high enough, so as to be certain that you will have a good circulation in the stump, otherwise a re-amputation may be found necessary later on, much to the patient's peril and the surgeon's embarrassment.

---

*Read before the Crow Wing Valley Medical Society, at New Paynesville, August 10, 1904.

We should not leave the subject of embolism without briefly considering another form of embolism which is not of infrequent occurrence, viz., *fat embolism.* Fat embolism is caused by injuries to the bones and soft parts in regions where there is a great amount of fat. These fat globules enter the circulation and occasionally produce alarming symptoms, which often develop within twenty-four to thirty-six hours after an injury.

The symptoms of fat embolism are variable, such as restlessness, anxiety, accelerated pulse, dyspnea, and, in more severe cases, delirium, cyanosis, coma, and death. Examination of the urine will disclose oil globules floating on the surface.

CASE

The treatment of fat embolism is prophylactic by immobilizing injuries and promoting free drainage; medicinal by free stimulation.

We will now briefly consider the history of a case of obstruction of the axillary artery by an embolus which quite recently came under the writer's observation.

J. M. Mc——, aged 59, farmer, was born in this country of Irish parentage. Family history and personal history good; no evidence of any tubercular or syphilitic taints. Patient had never been ill with the exception of the exanthematous diseases of childhood. He was noted in his locality for his vigorous health and voracious appetite.

About a year ago he consulted me for shortness of breath and pains in the lower limbs. Upon physical examination I found he had a very rapid pulse 120-130, of a weak irregular character. His heart action was very feeble, but I could not make out any valvular murmurs. After a few weeks' treatment in the way of rest, antirheumatics, and cardiac stimulants the condition became greatly improved, and he was able to resume his usual work.

Feb. 16, 1904, he again visited my office, complaining of severe shortness of breath. I found him suffering from cardiac dyspnea, and advised him to go home, go to bed, and keep quiet. I prescribed strychnine and digitalis in the way of medicinal treatment. He neglected to heed my advice, and a few days later came into my office, gasping for breath, and complaining of numbness and severe pain in his right arm. Upon examination I found his pulse was barely appreciable in his left arm, and that his right arm was cold and almost devoid of circulation below the axilla. He was put to bed as soon as possible, and we tried to favor the return of the blood supply by the use of hot fomentations and moderate elevation of the extremity. In order to keep him fairly comfortable, the pain in the arm being very severe, it was found necessary to administer heroic doses of morphine, hypodermically, in conjunction with the free use of stimulants by the mouth. All our efforts to favor the dislodging of the embolus, and the restoration of the circulation were unavailing, and the following day we were confronted with a case of beginning gangrene of the forearm. I called in Dr. Ridgway of Annandale to see the case, and after consultation we decided to wait till the line of demarcation formed before resorting to amputation, provided no other symptoms presented themselves, rendering an earlier operation advisable. During the next four or five days the extremity gradually assumed the aspect of a case of typical dry gangrene and a line of demarcation began to form a few inches below the elbow, the forearm gradually assumed a dusky, mottled appearance, the fingers began to shrivel up, and they became flexed so that they soon looked more like birds' claws than human fingers. Believing that the time to resort to surgical measures had arrived, Dr. Ridgway, of Annandale, and Dr. Vibrance, of Watkins, were called to assist in the operation. The question now arose where to amputate, and after considerable argument pro and con it was finally decided that disarticulation at the shoulder was none too high, and future events proved the wisdom of the decision. While we appreciated the fact that there would be greater shock to the patient in a disarticulation at the shoulder-joint than an amputation nearer the elbow we believed that there would be a greater risk to the patient manipulating through the poorly nourished tissues near the elbow and assuming the risk of the necessity arising for a re-amputation later on than attacking the region of the shoulder where the probability of getting well nourished flaps was much greater.

The arm was disarticulated at the shoulder, the incision being made after the oval-flap method of Larrey, hemorrhage being controlled by a rubber tourniquet high up in the axilla and digital pressure. The patient rallied from the operation as well as could be expected under the circumstances, but for ten days following he was so critically ill that his dissolution at times was momentarily expected. His pulse was very rapid, 140 to 150, and extremely weak, and hiccough and delirium were present at times as an omen of approaching collapse; but he finally rallied and entered on a slow convalescence.

Upon making the first dressing, three or four days after the operation, we found a large part of the anterior flap gangrenous, due to poor blood supply; this portion gradually sloughed off, and the parts gradually healed up by granulation.

The points I wish to emphasize in this paper are these: First, the rarity of this complication following chronic endocarditis; second, would it not be possible in the case of an embolus lodging in as large an artery as the axillary or femoral to attack the condition surgically as soon as the diagnosis could be made, open up the artery, remove the plug, sew up the vessel, and save the patient's limb and possibly his life?

In amputating for gangrene of a limb following an embolus be absolutely sure to make the incision high enough to secure good healthy flaps.

EXPERT EVIDENCE IN COURT*

By R. S. Joyce, M. D.

OGDEN, UTAH

It is stated on good authority that with the multitudinous troubles devolving upon Adam and Eve in their first great combine they were free from all kinds of suits. Many generations followed in their simple footsteps before the personal injury business began to thrive. While each man tilled his own acre of soil with an ox and crooked stick, harvested his crop with a sickle and threshed it with a flail, there was little chance of a serious personal injury. Jurymen of that day, if such there were, were conversant with all the tools and appliances in common use, and the injured either died or recovered without medical aid. Civilization progressed, and men became employer and employee. Machinery began to replace crude implements in industries of ever increasing magnitude. The sickle has been forgotten, and the ox is known only because his picture is still in the primer. Intricate devices known only to a few who have made a study of them have multiplied so rapidly that to know all to-day is impossible. With the disappearance of the plough and the sickle, and the advent of civilized appliances, has come a new set of human beings with protected bodies and baby digestion. Their muscles are flabby, and jaws too small for the number of teeth. They ride to work, if work it can be called, or, if of the gentler sex, sleep until noon, and by the glare of electric lights they turn day into night. They require stimulants to coax their appetite, and sedatives to produce sleep. To live without manual labor is the problem of to-day. No wonder, then, that mental aberrations are more numerous, and no wonder that the problems confronting us in personal injury cases are more complex.

Has the method of deciding controversies kept pace with the march of time? Let us see. A man is injured in a factory where none but skilled artisans are employed. He or his company employs a surgeon to attend him and to restore him to health and usefulness. Have we as surgeons kept abreast of this march? Are we sufficiently posted upon the effect of injury upon various temperaments ranging from the nervous wreck to the athlete? Do we consider the recuperative power of each subject as it will be affected by his future vocation? Are we posted as to the effect of rheumatism and syphilis as connected with injury, or should a defendant pay for generations of disease and vice?

---

*Delivered at the Utah State Medical Association, Ogden, Utah, May 10 and 11, 1904.

Nearly every state now has a medical-practice law which stipulates who shall and who shall not practice surgery. So far as caring for the average injury, only men who are competent are admitted. Most any man can set a limb if broken, or sew up a flesh wound. This average good judgment is a credit to the profession. Unfortunately, however, comparatively few such cases uncomplicated are ever heard of except by the doctor or the country newspaper. We, too, have advanced. We are told that in ancient times the duties of the physician, lawyer, and priest devolved upon one person. Medicine was practiced according to rules and specific regulations contained in sacred books. So long as the physician kept within these rules he was safe from reproach and persecution, but if the rule was transgressed he might be tried and put to death.

Greece and Rome knew nothing about personal injury suits so far as physicians' testimony was concerned, for the physician was called to treat the injured. The layman testified to the patients disability in court, and the court decided without medical testimony what the damage should be. The bodies of those who had been killed violently was exposed to public view that anyone might say what had caused the death. Of course at this time no such intricate questions as traumatic neurasthenia were considered.

About the year 500 A. D. the physician or midwife decided such questions as pregnancy, rape, poisoning, and insanity, and the court was bound by such evidence. The number of physicians to a city was regulated by law, and their word had some weight. History says that these questions were determined by physicians. It does not mean, I take it, that each side to a suit employed physicians, who appeared in court as much prejudiced as the opposing counsel, and without having seen the wounded or the deceased, answered a hypothetical question covering four typewritten pages, yes or no. History neglects to say that each of these physicians felt as if he were the culprit before he got off the stand; that he was confronted with authorities, *ad nauseum*, as contradictory as the verbal testimony, and with books of known and unknown authorities—books whose excuse for existence is more of a mystery than their contents. When all this conglomeration of good and bad, intelligible and unintelligible testimony, running over days and even weeks, is concluded, it is at last submitted to twelve farmers unaccustomed to city life or indoor confinement, who are anxious to get home, and whose constant sitting has made their gluteal region more sensitive than the cerebrum.

Although medical men were called to decide points relating particularly to their profession from the 5th to the 15th centuries, medical testimony, as we now understand it, was not legally recognized until about 1500 A. D., and Germany seems to have led the world in its introduction. Under the code adopted in 1532 physicians gave testimony in court as any other expert might. For three centuries afterward there was but little literature to guide the medical expert. Half a dozen text-books on the subject is probably all that can be discovered. The nineteenth century, however, marked an awakening in medico-legal literature, and to-day we have authorities sufficient in number at least to satisfy the most critical.

Idle men sometimes write very readable books, and oftentimes books are placed on the market whose author would gladly recall them a few years hence. In litigation every edge is made to cut, and you are confronted with a book whose author is unknown to you, but for fear of seeming ignorant you admit that he is an authority. If you are not familiar with his work it is a poor authority for you to tie to. If the book is over ten years old, and no demand has called for a later edition or revision, you may safely say that you do not consider it the best authority. If the book finds no place in the best medical colleges in the country its value is uncertain.

What I would urge upon the medical fraternity of to-day is to cultivate a habit of constant reading that we may honestly say what is and what is not authority. Nor are the new things always good unless presented by men of recognized authority as medical teachers in good colleges. "Scrivner's Palsy" affects a majority of doctors, but "Scrivner's Itch" is not unknown to the profession. It is difficult to thoroughly lay an abstruse medical problem before the average layman. He has read newspaper ads from day to day that destroy your fine theories. He has a friend who knew a man who lost his arm through vaccination, and another who was cured by the local application of a black cat skin. He knows this friend, and he only knows you by reputation. Perhaps you have been instrumental in collecting a bill from him. Perhaps you are not of the same political or religious persuasion. If so your theories are likely to be wasted.

The standard of the medical profession is higher than that of any other. Its members are among the most honorable in any community, and yet the testimony of the medical expert is the source of derision. Two or more physicians meet at the bedside, go over their case and arrive at an amicable understanding. That decision is accepted by all at interest as supreme. The laity seldom trifle with such a verdict. Many wise legislators have tried to solve this difficulty, but I say it is for us to "work out our own salvation." When called upon to testify in court it is our duty to consult, not to fight—to meet as honorable, educated gentlemen, and decide as we would were it a bedside consultation. What the patient says or what his friends say has but little weight in arriving at a diagnosis. The means at hand for physical diagnosis make the patients story useless, or should do so. The dependent wife and children, the horror of the accident as recited by the patient are nice historically, but perhaps the man was not hurt at all. The average man or woman exaggerates his ills as he relates his story. What, then, must he do if his life or a fortune depends upon his making things as bad as possible? A patient with normal pulse and temperature, normal reflexes, no deformity, swelling, or atrophy, clean tongue and soft skin, normal lungs, heart and urine, is not entitled to much sympathy from a doctor. A man or a woman who never was said to be insane prior to the commission of a crime certainly got crazy at a very opportune moment.

Medical testimony is often more confusing than enlightening to the jury. It has become a practice of many attorneys to employ regular experts whenever they have a suit where medical testimony can be introduced. These men often testify on a contingent fee. The lawyer gets $2,000 and the doctor $50, if the suit is finally won in the supreme court. Corporations and the state proceed along similar lines with the exception of the contingent fee. In their case the physician gets nothing at all in most instances. It is like a political skirmish: Men who are honest in ordinary matters become interested in a case and line up for battle, and he who can reach through the juryman's hide is triumphant regardless of the medical facts.

Outside of courts of justice such things as "railway spine" and "traumatic neurasthenia," "emotional insanity," and "color blindness" from injury are spoken of by the profession as a huge joke. Why have they become fixtures in court? Simply because from our indefinite knowledge of some vague subjective symptoms we have permitted a coinage of words which, like the mule, has "neither pride of ancestry nor hope of posterity." Let me recite a case or two:

A woman was thrown forward in a chair-car, and struck her forehead against the cushioned seat in front. It produced no mark. One of her physicians swore that after a thorough examination she had, as a result of this injury and nothing else, loss of voice, leakage of the heart, dilated stomach, floating kidney, ovarian trouble, misplaced uterus, and traumatic neurasthenia. She got a small verdict.

Another: A man was thrown against the seat and had two ribs fractured, but not broken, and the heart violently thrust five inches to the right into the mediastinum, where it remains, giving the apex beat over the ensiform cartilage. Like a triangle of pool balls, these organs, after the first shot, strike every cushion in the body. I venture that old Dr. Gray has worn his coffin smooth turning over when he hears such testimony. It is such testimony, and not legitimate facts, that has discredited the medical man in court. In my judgment it is largely due to the individual method of arriving at conclusions. If, after years of experience, you have never seen a case similar to the one complained of, you should be cautious about giving a positive diagnosis.

What usually becomes of your own broken bones and sprained ankles, your wrenched backs and bruises of all degrees of severity? They get well as soon as the bill is paid. How many bumps and bruises or broken bones have you had yourself, and what has become of them? This should run through your mind if you want to be fair. What a man does when half drunk or when angry or provoked is not necessarily insanity. It may have been the proper thing to do. Let me say now, lest I be misunderstood, that the corporation surgeon or state physician is not an angel, and I do not impeach the veracity of the prosecutors as a whole, for they are often forced to testify against their will, and in the heat of battle become imbued with the line of argument of an anxious attorney and a more anxious client. I believe the average physician could answer questions more intelligently were they asked by a physician, and not garbled second-hand through an attorney; but this is not permissible.

If there is anything of virtue in expert medical testimony, we, as physicians, must decide how the problem is to be solved. If the court will not permit one physician to question another on the stand, then we should do so in private and render our conclusion on the stand. We owe this to ourselves whether it please the public or not.

SINGULTUS.*

By W. V. Gulick, M. D.

ORONOCO, MINN.

Hiccough, which may be a result of various pathological conditions, is ordinarily dismissed with incidental consideration, but there are times when this one symptom becomes so developed as to threaten the safety of the patient, and demand attention apart from the treatment of the disease. Again, there are instances where hiccoughs occur, and are protracted and severe, without any diagnosed cause.

In 1827, in The Modern Practice of Medicine, Dr. Robert Thomas said that hiccoughs are generally a symptom, but sometimes a primary disease, and that when idiopathic they usually rise from an error in diet or from an acidity in the stomach. And now, three-quarters of a century later, the statements we find in print do not go much beyond this in the information given, though the variety of possible causes is indefinitely enumerated.

The act itself probably originates with the stimulation of the respiratory center by an afferent impression which is either of central or peripheral origin, and gives resulting efferent impressions over the phrenic and pneumogastric nerves, that cause the contraction of the diaphram, and interrupt inspiration by the sudden closure of the glottis, recurring with a varying frequency that in certain cases has been known to reach the rate of eighty to a hundred times a minute.

Heidenhain is mentioned as regarding irritation of the phrenic nerve to be the usual efficient factor in producing hiccough. Tyson, however, denies the influence of the phrenic nerve, and in the American Year Book of Medicine and Surgery names the following causal groups: (1) *abdominal inflammation*, especially of the peritoneum and the intestines; (2) *specific cases*, of circulating poison as in gout or malaria; and (3) *neurotic forms*. Osler quotes W. Langford Symes, and adds to these three headings, that of *irritative causes*, which would include the direct stimulus of esophageal burns, as well as pathological changes, involving the wall of the esophagus in the region of the diaphragm, and various disturbances of the stomach and bowels, especially those associated with a gaseous distention. In the idiopathic cases some systemic taint is suspected, as gout, diabetes, or nephritis. And of the nervous forms that occurring with hysteria is reckoned as one of the most obstinate.

In a thesis, published in 1901, Boemchis discusses hiccough with a concomitant vomiting as a complication, sometimes causing anxiety in typhoid fever.

By other writers the different organs of the abdomen, the pelvis, and the chest are separately named as the possible seat of disease which is responsible for a reflex disturbance. Mediastinal tumors are suggested, and Eichhorst calls attention to the predisposition of children to this clonic spasm of the diaphragm, which may be due to an overfilled stomach, or even brought on by hearty laughter.

---

*Read before the Southern Minnesota Medical Association, at Rochester, August 4, 1904.

And with the hiccough once established it may continue, most persistently resisting therapeutic measures, sometimes even going on to a fatal issue. The American Year Book tells of an old man, of gouty inclination, whose hiccoughs stubbornly resisted treatment and lasted through ten days.

The treatment should properly seek to control the cause. Thus with the digestion immediately at fault, emetics and purgatives may give relief. But with the etiology in doubt many measures and remedies have come to be used empirically, external applications, sprays, electricity, cauterization, epigastric pressure, and the swallowing of ice are among the measures that have been recommended; and of drugs, stimulating, sedative, or used as specifics, a long list could be made. But Dr. Frank Billings, in the Hand-Book on General Medicine for May, 1902, regards these obscure cases as a manifestation of intoxication, and would criticize those measures which failed to seek the direct cause. The responsible toxins he speaks of as stored in the organism of the patient, and at this time as particularly attacking the nervous centers, and consequently he makes the establishment of elimination of first importance. He would advise cold baths (22° C.), and would have the patient drink freely of fluids. With a deficiency in the quantity of urine excreted, and a dry mouth, he would suggest the subcutaneous injection of an artificial serum; for, he says, "If we disintoxicate the patient thoroughly by all the means in our power and if the urination becomes reëstablished, the nervous symptoms will disappear, and the hiccough is cured."

Of the idiopathic type the following case is illustrative:

A farmer, twenty-nine years old, of robust appearance, began to hiccough in the afternoon of March 11, 1904. His previous health had been fairly good, though for several months he had lacked his usual relish for food, and for half a year had frequently hiccoughed mildly for the five or ten minutes after going to stool.

At the beginning of the attack simple remedies gave temporary relief, and rather large doses of sodium bromide secured about four hours sleep for one night. On the morning of the third day, his temperature was 102.5°, pulse 100, and respiration 30. Outside of an epigastric soreness, the physical examination was negative, and the urine was said to have been passed about as usual. The hiccoughs gradually tended to increase in violence, and came about thirty times a minute.

Hot and cold applications, amyl nitrate, cocaine spray, and asafetida failed to bring any relief, and morphine, hypodermically, was of only temporary service. On the morning of the fourth day, after the patient had been hiccoughing with severity for near twelve hours, one ounce of ether was used in producing general anesthesia, which was followed by an hour and three quarters of sleep. Afterwards he hiccoughed at intervals, about half the time, but with lessening severity. A quarter of a grain of morphine was followed by six hours of sleep, after which the hiccoughs were not troublesome, were checked with a swallow of hot water, and within two days had stopped altogether. The treatment, outside of that mentioned above, was liquid diet (with rectal feeding at first), colonic flushing, and diuretic and laxative drugs.

On the third day the patient urinated twice, on the fourth day only once, but at that time passed over a quart; and for the following two days the urination was both scanty and infrequent. An examination made March 16 (the fifth day), gave specific gravity 1035, acid reaction, no albumen, and a few small granular epithelial casts. And a second examination, a week later, showed specific gravity 1024, acid, no albumen, no sugar, and under the microscope a large quantity of uric acid crystals.

Within a fortnight of the stopping of the hiccoughs the patient suffered an attack of pleurisy, with a temperature that did not go above 100.4°, after which he went on to an uneventful though slow recovery.

In reviewing this subject the following general conclusions may be stated:

1. Hiccough, in its persistent form, is ordi-

narily a symptom, and the cause which may be *inflammatory, neurotic, irritative,* or *specific,* may demand medical or surgical treatment.

2. As a symptom hiccough may need special treatment because of the immediate disturbing and exhausting consequences.

3. In the so-called specific, or idiopathic, cases a systemic intoxication is to be suspected, and thorough elimination sought.

DISCUSSION

Dr. Arthur Sweeney (St. Paul): Hiccough may be, and most likely is, of organic origin, hence the cause should always be sought. The act of hiccough is reflex, but there is some organic disease that causes it. I believe that two reflexes cannot exist at the same time, hence if you excite another reflex, the hiccough will cease for the time being. Tickle the nose with a feather and cause sneezing, or press on the ear, or do most anything to establish another reflex, and the hiccough will cease. Set up another reflex, and the former will disappear.

Dr. J. E. Crewe (Rochester): I would mention a case in the City hospital, Minneapolis, where it was found that dilating the rectum would stop the hiccough, but it would return with the removal of the dilator, so we left the dilator in the rectum, and kept the patient relieved in that way.

BIBLIOGRAPHY

American Year-Book of Medicine and Surgery, 1896.
Hirt.—Diseases of the Nervous System.
Wilson.—American Text-Book of Therapeutics.
Wood and Fitz.—Practice of Medicine.
Bartholomew.—Practice of Medicine.
Robert Thomas.—The Modern Practice of Medicine.
Eichorst.—Practice of Medicine.
Lyman.—Practice of Medicine.
Osler.—Practice of Medicine.
Billings.—Practical Medical Science, May, 1902.
Hare.—Practical Therapeutics.

THE HOSPITAL BULLETIN

ST. BARNABAS HOSPITAL

MINNEAPOLIS

A CASE OF EXTRA-UTERINE PREGNANCY

In the Service of Dr. A. E. Benjamin

Mrs. G——, aged 26, American; one child 8 years old.

Family History, good.

Personal History: Was not well for two years after her child was born until an operation was performed to repair a lacerated cervix and perineum. She was perfectly well after the operation until the middle of September, 1903, when she caught a cold and had bronchitis, which lasted until the last of November. Her last regular normal period occurred December 4, 1903. Her health was then very good until January 20, 1904, at which time while out skating she fell. Severe pelvic pain was immediately experienced, and she began to flow. She was taken home at once. The pain gradually became less severe, but the flow, which was about equal in quantity to the ordinary period, lasted five days. Most of this time was spent in bed. From this time on she did her ordinary housework, and felt about as usual, but not quite so strong, until Feb. 10, when pain in the back and bearing down in the pelvis, with pressure on the rectum, was suddenly experienced. She became faint, and went to bed. She began to flow also, and continued to do so for five days. The pain was more severe at this time, and lasted longer. She had begun to think that she had been pregnant, but no fetus or membranes were expelled.

On February 18 she consulted me at the office, where I obtained the above history. Not having seen her for several years I was at once struck with her appearance. She looked anemic, much thinner, and her complexion was of an icteroid hue, or rather she impressed me as a case that had steadily lost blood for a time. She had a hacking, reflex cough, but no lung trouble was present. Her appetite was irregular, pains in the stomach and abdomen were experienced after eating, and the bowels were constipated. She complained of dysuria also. Her chief complaint, however, was of the burning pain in the rectum, and the pressure and discomfort experienced at that point while sitting down. She had been disturbed for a number of nights previous with pains in the pelvis and in the rectum.

Physical Examination: Uterus about normal in size and position. Right ovary apparently cystic and prolapsed. This fluctuating mass had dropped into the cul-de-sac, and made the pressure on the rectum, which she had complained of. With the history given, and the presence of this mass, extra-uterine pregnancy was strongly suspected. No other trouble was discovered excepting a right prolapsed kidney.

She was advised to go to the hospital immediately, which she did, where a blood and urine examination was made. The leukocyte count was 5,000, and hemoglobin 75 per cent; temperature 98°; pulse 110. The urine contained some pus and a few casts. The patient was kept under observation for a few days, during which time she was being prepared for an operation. Her pulse remained nearly 100, and the temperature normal until the operation.

On February 22 an operation was performed. A curettement was done with negative results. A post-vaginal incision revealed the presence of blood in the pelvis. A laporotomy was then rapidly performed. The patient was not in good condition to stand much surgical work. The abdomen was found to contain great quantities of old, dark blood—clots and serum. The right ovary and tube formed one mass. The fimbriated extremity of the tube, ovary, intestines, and organized tissue formed a sac at this locality. The outer three-fourths of the right tube was dilated and enlarged to four times its normal size. The ovary was also enlarged to three times the ordinary size. The tube and ovary on this side were removed. The left ovary and tube were perfectly healthy. No fetus was found. The patient made a slow but a complete recovery, regaining all her usual color and good health.

The important points of interest in this case are the following:

1. The missing of her regular period in January.
2. The first indication of some unusual condition following a fall.
3. The resemblance of the symptoms to an ordinary abortion.
4. A normal state of health between these two attacks of pain.
5. The patient being able to be up and around nearly all the time between these periods.
6. The normal temperature and high pulse rate and nearly normal white count.
7. The great amount of trouble in comparison with the symptoms present.

IN PRIVATE PRACTICE

A CASE OF PRIMARY MUSCULAR DYSTROPHY

By Dr. Geo. Douglas Head.

Roy D——, ten years of age, school boy; father and mother living and well. No history of chronic muscle or nerve disease in grand parents, uncles, or aunts; other children in family living and well. As a baby the boy was fed on prepared foods. He developed slowly, and did not learn to walk until after two years of age. He had no serious children's diseases, but was always poorly nourished, and despite the best of feeding with fats, cream, etc., was always poor and thin. He never had convulsions. From the time he began to walk the mother noticed that the boy was clumsy on his feet, and could not run and play as other children of his age. As he grew older she noticed a tendency for the child, on getting up in the morning, to walk on his toes, and there seemed to be a difficulty in putting his feet flat on the floor. After he had been out of bed for a while the child would get his heels down to the floor, and walk like other children. When going upstairs he would take one step at a time, putting the left foot first and following with the right, and this he still does. For the past two years this tendency to walk on his toes has gradually increased. He plays ball and other outdoor sports, and is in the open air all day. Despite this exercise the muscles of his arms and legs do not develop. Mentally he is bright, and has always kept up with his class in school.

At first the parents paid little attention to the condition of the child's muscles, thinking he would outgrow it. Of late they have been trying all sorts of treatment without any permanent help.

On examination the patient is an undersized boy for ten years of age. He stands in a stooped position, with his heels raised from the floor and the weight of the body on the fore part of the foot. He has a rather large head, a cleancut, intelligent, face, and answers questions promptly. When told to put his heels down on the floor, he can do it with an effort, and by bringing forward his body, but he cannot keep them there for any length of time. His arms and legs look unusually thin and spindling. The scapulæ stand out like wings, and the intercostal spaces are prominently depressed. The chest shows a rachitic rosary. The color of skin and mucous membranes is good. What especially strikes one about the appearance of the boy is the lack of muscular development in the muscles of the legs, arms, and shoulder girdle. When asked to pick up a pin thrown on the floor, he bends forward and picks it up by supporting his body with his hand on his knee. When put on the floor in a sitting posture and told to rise to his feet, he gets on to his knees, but cannot rise farther until he puts his right elbow or hand upon his right knee to help himself up. When placed flat on his back and told to get up, he rolls over on his belly, and rises on all fours to his knees, from which position he gets on to his feet by supporting his legs with his arms. There is a general weakness of all the muscles of his legs and arms, as shown by resisted movements. There is no disturbance of sensations of pain, heat, or cold, in the affected limbs. Reflexes are present but diminished. There is no ankle clonus and tenderness along the nerve trunks, or over atrophied muscles. Pupils react to light. Lungs, heart, and abdominal organs are intact.

This patient first came for advice in May, 1902, at which time the diagnosis of primary muscular dystrophy was made. In April, 1904, the patient again came for advice concerning tenotomy of both tendons of Achilles to relieve the tapipes equinus. On the second examination the boy's muscular condition had undergone a slow but gradual change for the worse. The muscular atrophy was more pronounced, the talipes equinus more persistent and of greater degree. He was, however, able to be out of doors, and could play with his mates. He had kept at school. There was no muscular hypertrophy of any of the muscle groups. Blood and urine examinations were negative. Tenotomy was advised against, and an unfavorable prognosis as to recovery made.

CLINICAL MICROSCOPY

Conducted by George Douglas Head, M. D.

BLOOD PRESSURE IN DISEASE

As the work on blood pressure is arousing considerable interest, a resume of the findings up to the present time in various diseases will not be amiss. I present them as given by Cowan in "The Practitioner," August, 1904.

In pulmonary phthisis the blood pressure is lower than normal, and becomes still lower as the disease progresses. This is also true of all diseases with marked cachexia.

In enteric fever the pressure is subnormal, and rises only at convalescence.

The complications of typhoid perforation and peritonitis usually raise the pressure.

In acute articular rheumatism and pneumonia the blood pressure is subnormal.

In tuberculous pleurisy, it is subnormal, while in pleuritis from nephritis, the pressure is high. As regards blood pressure in interstitial nephritis Cowan gives some interesting figures from the investigations of Aubertin and Ambard. Of 8 cases of interstitial nephritis with high pressure, 3 showed at post mortem large adenomata of the suprarenals, and in others the suprarenal capsules were abnormally large. In 7 cases of interstitial nephritis without high pressure this suprarenal hyperplasia was absent, and also in 11 cases of other diseases without high blood pressure. It would therefore seem as if high blood pressure in interstitial nephritis was not a condition due to the nephritis, but was due to some undue functional activity of the suprarenal gland.

Organic heart disease has little effect upon blood pressure unless compensation fails, when the pressure is low. This, however, is not always the case.

In arterial diseases the blood pressure is usually increased, although upon this point there is much difference of opinion.

In interstitial nephritis a very high blood pressure is the rule. In acute it is usually elevated, but in chronic parenchymatous nephritis it is about normal.

In interstitial nephritis according to Broadbent a low blood pressure is of grave significance.

In diabetes mellitus the pressure is high.

In mania and cerebral excitement and in epileptics the pressure is high, but in states of mental depression it is low.

In surgical shock the blood pressure is lowered due to the exhaustion of cardiac muscles or cardiac centers, as has been shown by Crile. Blood pressure falls during narcosis, also while fluid is being removed from the pleural or abdominal cavities. During operation upon the abdomen the blood pressure seems to fall in proportion to the injury done the peritoneum.

NORTHWESTERN LANCET

A SEMIMONTHLY MEDICAL JOURNAL

The Official Organ of the Hennepin County Medical Society

W. A. JONES, M. D..................EDITOR

Editorial Office, 515 Pillsbury Building

W. L. KLEIN, PUBLISHER

SUBSCRIPTION, $2.00 A YEAR.

839-840 Lumber Exchange......................Minneapolis

OCTOBER 15, 1904

THE CHIROPRACTIC DOCTOR

The festive chiropractic is advertising his wares and methods in the opera house programs. One Dr. (?) R. Sellwood makes the startling announcement, under the heading "Minneapolis College and Cure of Chiropractic," that, "All diseases treated on the spinal column which is displaced and must be replaced to give nature a chance to work; specialist on appendicitis."

For an advertisement this is a curiosity. The gentleman who framed the advertisement must have followed his theories conscientiously and evolved the statements from his spinal column, evidently below the lumbar region, as his brain was not called into requisition. It must be tremendously uncomfortable to have a disease like appendicitis, in which the gentleman is an alleged specialist, treated on the spinal column. Perhaps the appendix is removed, the patient is turned over on the stomach, and the unfortunate appendix is trailed up and down the column, occasionally rolled under the hand, and spanked like a spoiled child. At any rate, it gets its just deserts if it is chiropractically inclined. Perhaps if more appendices were treated in this blacksmithian method, it would discourage the bacteria from lodging therein. If the colonies of bacteria would congregate on the spinal column, and their temporary owner rush at once to the chiropractickle man the world would be healthier for their disappearance.

Between the chiropractic and the osteopath the numbers of normal spinal columns will be reduced to the minimum. It is evident from the accumulation of practitioners that spinal diseases will lead the van; the poor general practitioner of medicine and the surgeon must seek other and more possible fields for exploration. Perhaps the spinal column specialist may succumb to ordinary diseases of mankind, and thus afford an opportunity for drugs and surgery to continue their old-time theories.

POLLENTINE

The German scientist, Dr. Dunbar, gave an illustrated lecture before the Hennepin County Medical Society on Monday evening.

Dr. Dunbar was born in St. Paul, and educated in Germany. He is a man of pleasing address, conservative in his statements, and convincing in the exploitation of his theories. His study of the causes of hay-fever is a distinct advance in the right direction. He evidently discards all of the older ideas, so dear to the heart of the specialist, and places hay-fever where it belongs.

The hay-fever subject is a neurotic with a pronounced tendency to suffer at certain seasons from certain toxins, particularly the toxin derived from grasses, ragweed, and goldenrod. The toxin of the two latter are identical. These toxins and their appearance at definite seasons account for the early and late forms of so-called hay-fever.

The toxin is derived from the pollen of grasses and other pollen-bearing plants by a delicate process whereby the albumen is extracted, and forms the basis of experiments and the cultivation of an antitoxin.

The theory that the sharp points of the flying pollen are the sole irritant in the causation of hay-fever is disproven. The various extractions, as well as the irritants, were excluded by experimentation on hay-fever subjects. The one derivative, an albumenoid toxin, was found to be the only portion of the pollen capable of causing an attack in a favorable case.

Dr. Dunbar demonstrated on seven hay-fever subjects, who formed the clinic at the Society's meeting, the irritant effects of his toxin. Seven control patients, who never had hay-fever, were treated to a solution ten times as strong as that used in the hay-fever cases. No hay-fever or irritating symptoms were developed in any of the control cases. The first set of cases were then treated with antitoxin, and all improved within a remarkably short time.

The antitoxin is prepared in the usual manner, injecting the toxin in high-bred and healthy horses, and carried on in successive stages until no reaction is present. The serum thus prepared is then dried and mixed with an innocuous powder and is ready for use. The toxin must be freshly prepared in order to produce results, as it deteriorates rapidly. The antitoxin was found to be impracticable in solution, hence the powder form.

The antitoxin cannot be used hypodermatically on account of the erythema, edema, and urticaria it causes. This is an unfortunate feature, but for the time must be accepted.

Dr. Dunbar does not claim a curative principle in his antitoxin. It relieves the attack, and makes the patient comfortable. Immunization cannot be accomplished on account of the continuous flying of the pollen, and the difficulty of guarding the mucous membranes on which the pollen lodges. The antitoxin prevents the toxin of the pollen from accomplishing its purpose by destroying it; hence the antitoxin must be used as a prophylactic before the onset of the attack.

The antitoxin may be introduced into the nostrils or throat and upon the edge of the eyelids, and repeated as often as desired. Immunity in the eyes may last from three to eight days; in the nose and throat the application of the powder may be made daily during the hay-fever season.

Many failures may be expected unless great care is employed in the use of the antitoxin. Many cases of practical relief may be expected if the antitoxin is applied strictly in accordance with the directions.

A new remedy is always expensive, and this pollentine (antitoxin) is no exception. A small vial of the powder, protected by a patent, sells for something over four dollars. This quantity will last an ordinary case a few days. If several vials are required to carry the patient through the hay-fever season, and the comfort that is claimed for the remedy is attained, the relief is less expensive than a trip to a hay-fever resort.

It would be folly to claim that all cases of hay-fever can be relieved by the use of pollentine. The atypical forms of hay-fever, those in which extension of the toxin to the stomach and intestines in highly nervous patients must be treated early and generously if relief is to be obtained, yet the remedy has been developed by a scientist who has carefully studied the subject, and it is worthy of careful consideration and trial.

Any remedy that promises relief would be welcomed by patient and physician.

REPORTS OF SOCIETIES

HENNEPIN COUNTY MEDICAL SOCIETY

F. A. KNIGHTS, M. D., SECRETARY

A stated meeting of the Hennepin County Medical Society was held on October 3d in the Andrus building, Dr. C. H. Hunter, president, in the chair, and about one hundred and forty members and visitors present.

The application for membership of Dr. W. W. Porteus, graduate from McGill and Edinburgh, address 313 Pillsbury building, was read and referred to the Censors.

The Board of Censors reported having written Dr. Geo. H. Simmons, secretary of the A. M. A., inquiring as to the admission of homeopaths into county societies, and received the reply that they could not be admitted while teaching in homeopathic colleges or holding appointments on the homeopathic staff of a hospital or retaining membership in a homeopathic society. This opinion was asked for because of the applications of several homeopathic physicians for membership in this Society, but upon receipt of a copy of Dr. Simmons' letter the applications were all withdrawn.

The Censors reported favorably upon the application of Drs. H. H. Helk, A. McEachran, J. F. Plehu, M. J. Jensen, E. C. Robitshek and F. L. Adair for membership, and of Dr. H. E. Cory for reinstatement, and on ballot they were all elected.

Election of a librarian to fill vacancy being taken up, Dr. S. M. White was nominated, and the secretary instructed to cast the ballot for him. This being done, Dr. White was declared elected, and made a short speech of acceptance.

On motion of Dr. J. W. Bell the secretary was instructed to send flowers to Dr. Thos. Laliberte with a letter of sympathy.

Dr. A. E. Benjamin proposed that a stenographer, Mr. A. G. Long, be employed to take the scientific discussions of the Society. This matter was also referred to the Executive Committee.

On motion of Dr. F. F. Wesbrook the regular program of the evening was postponed till the next meeting, and the evening given up to Dr. Wm. Dunbar, of Germany, who then addressed the Society on the subject of his discovery of the antitoxin of hay-fever, and demonstrated its action upon susceptible individuals. After free discussion, Dr. Dunbar closed, answering many questions, replying to some criticisms.

MINNESOTA ACADEMY OF MEDICINE

A. W. DUNNING, M. D., SECRETARY

The annual meeting of the Academy was held on Wednesday evening, Oct. 5th, at the West Hotel in Minneapolis. The president, Dr. Wm. Davis, was in the chair and thirty-six members were present. The election of officers resulted as follows:

President, Dr. M. P. Vander Horck, of Minneapolis; vice-president, Dr. Archibald MacLaren, of St. Paul; secretary-treasurer, Dr. Arthur W. Dunning, of St. Paul. Executive Committee, Dr. J. L. Rothrock, of St. Paul, and Drs. W. A. Jones and R. J. Hill, of Minneapolis.

Governing Board, Dr. Haldor Sneve and Dr. Wm. Davis, of St. Paul, and Drs. J. W. Bell, C. G. Weston, and A. W. Abbott, of Minneapolis.

Dr. L. B. Wilson, of Minneapolis, read his inaugural thesis entitled "The Relation of the Clinical Symptoms of Diphtheria to the Number and Varieties of B. Diphtheriæ Present in the Patient's Nose and Throat." The paper was discussed by Drs. Christison, White, Ramsey, Carlaw, Wesbrook, Russel (of Spokane, Wash., a guest of the Academy) and by Dr. Wilson in closing.

CORRESPONDENCE

PROF. DUNBAR AND HIS HAY-FEVER TOXIN AND ANTI-TOXIN

EDITOR OF LANCET:

Minneapolis, Oct. 8, 1904.

Those who have made a study of the literature upon hay-fever and who have had experience in the treatment of this disease appreciate the work of Prof. Dunbar and what he has accomplished as a result of his investigations. This is particularly true of those physicians who suffer from this disease, and while all physicians, as well as their lay hay-fever patients, would like to find some remedial measures which would give relief without causing them harm, that they may be enabled to benefit those patients who suffer so severely each year and whose health is undermined by the long after-effects of asthma, bronchitis, etc., or who are obliged to seek certain climates during the hay-fever season, from their experience and medical knowledge, they realize that specific remedies are not found empirically, and that years are required to demonstrate the cause and pathology of a disease, which must first be found, before proper treatment can be applied.

Physicians must appreciate what a tremendous victory has been gained by Prof. Dunbar in a study extending over a period of ten years in demonstrating the specific cause of this malady. Let us not then offer any criticism or show disappointment if the remedy, the antitoxin, which he has also given to the world, does not reach our expectations. Let us pause and marvel at what he has accomplished in demonstrating, not only that the pollen of certain definite plants produce these diseases, but that he has also demonstrated what part of the pollen produces the affection. No one had demonstrated definitely these causes before, and although Blackley, a physician suffering from hay-fever himself, in an extensive series of investigations had demonstrated, thirty years ago, the strong probability that the exciting cause of hay-fever was pollen, he did not so conclusively demonstrate but that one might believe it still to be of bacterial origin, and he did not demonstrate specifically the kinds of pollen that produce the disease. Nor did he analyze the pollen to determine what portion of it is poisonous. Furthermore, he believed that the pollen acted by mechanical irritation, while Prof. Dunbar has proven that it acts chemically. Prof. Dunbar has further proven that it is a violent poison when injected hypodermatically into a human being or an animal susceptible to the disease, although being innocuous in others.

He has demonstrated that the so-called hay-fever, or rose-fever, which appears in the spring months in this country, and which is the only disease of this character appearing in Europe, is caused by the pollen of grasses (rye, wheat, barley, Indian corn, etc.) and that the autumnal catarrh, or common hay-fever, of the United States, is caused by the pollen of the ragweed and goldenrod, and he has opened a large field for investigation as to the causes of those rarer forms which are brought on in certain individuals who are not susceptible to the pollen of grasses, ragweed or goldenrod—such a case, for instance, as that of Dr. Day, whose symptoms come on when he visits his former home in the East, where he suffered yearly from hay-fever, but is entirely free in this country, where ragweed and goldenrod abound. In his case the definite toxin of the pollen of ragweed, goldenrod and grasses gave no reaction. Such experiments clear up the puzzling clinical observations of those cases that are relieved by changing climates, even though they move into a climate where others suffer.

Prof. Dunbar gives us an antitoxin secured by extracting the serum of susceptible horses that have been innoculated with the disease, and he has repeatedly shown by his experiments that this antitoxin when mixed with the toxin will neutralize the activity of the toxin so that it is innocuous in the susceptible patient, where a moment before the toxin had produced characteristic reactions. Furthermore, experimentally, he relieved the symptoms produced by the toxin by using his antitoxin, and there are many scientific men who have used his antitoxin in the treatment of patients this year who report satisfactory results, despite the fact that there were many patients who were not benefited by its use.

Prof. Dunbar is very conservative in his claims regarding his antitoxin, and like all true scientists, he desires to await further experimentation before making great claims. It must be remembered that the antitoxin which has thus far been put upon the market is the specific antitoxin of the pollen of the grasses, and we would not expect it to be as beneficial in the treatment of ragweed hay-fever as a specific ragweed antitoxin, moreover, there are many things to be learned regarding its use, and it is probable that many of those patients who failed to get relief did not use the remedy correctly, and the writer believes that it will never be entirely satisfactory in all cases if used in the powdered form.

Some of those who witnessed the experiments performed by Prof. Dunbar at the Hennepin County Medical Society this week, and at my office the week previous, were not convinced, because the symptoms manifested were not violent enough, though the patients were all entirely satisfied. Prof. Dunbar, knowing the discomforts of the disease, was especially anxious not to make anyone suffer, and insisted on using the toxin greatly diluted, and he followed it by the use of antitoxin as soon as the symptoms had become manifest in the eye. He used it in the eye because it could be better seen and because it would not give as much discomfort as if used in the nose. Despite this fact, in the case of Dr. Nootnagel, enough of the toxin was carried from the eye through the nasal duct into the nose to cause complete stenosis of that nostril, and during the entire night following, an asthmatic attack that prevented sleep. The antitoxin was only placed in Dr. Nootnagel's eye, and while it gave relief from the eye symptoms did not give any relief in the nose or throat, though it might have done so had it been used in the nose. It is hardly necessary to state that Dr. Nootnagel firmly believes Prof. Dunbar has isolated the specific toxin of hay-fever. It might be well to say that Dr. Nootnagel had had no symptoms of hay-fever since the frost several weeks ago up to this time.

In no case where the toxin was used, though it was ten times as strong, in unsusceptible patients were symptoms produced. Those who are still in doubt, may prove these facts to their own satisfaction by securing or making the toxin, and experimenting in a similar manner.

The toxin will be of value in clearing up a diagnosis of indefinite cases.

Prof. Dunbar is now at work endeavoring to find out the predisposing causes. We hope that he may be as successful in this undertaing as he has in his investigations of the exciting causes.

FRANK C. TODD, M. D.

BOOK NOTICES

The Principles and Practice of Gynecology. By E. C. Dudley, A. M., M. D., President of The American Gynecological Society, Etc. Fourth Edition, revised, illustrated. Lea Brothers & Co., Philadelphia and New York, 1904.

At first sight the illustrations of this work are disappointing because they are entirely diagramatic, even including the microscopical sections which are too ideal to be real. As there are more than four hundred cuts it would prove a serious defect should the disappointment be confirmed by a closer examination, but as a matter of fact it soon appears that the intention of the author is to picture to the eye nearly every operation he describes, and many of them by a series of illustrations showing each step where the procedure is complicated. The result is highly satisfactory. Everything is made so clear that the beginner may go to work with confidence after reading Dudley's directions for performing the operation. The experienced operator, too, will get many helpful hints from the descriptions, since many of the methods given are the author's own.

The tendency of the day is to absorb the special branch of gynecology into that of surgery. After looking over such a work as this one cannot help thinking it will be a large swallow on the part of surgery to take in all that is contained in it and that does not appear in the ordinary surgical treatise of today. For gynecology is far from being only surgical, and even those affections which can be reached only through operative measures require so much in the way of description that they need to be discussed in a book by themselves.

It is interesting to note in passing that Dudley finds a good deal of use for the slighted pessary, that he is not enthusiastic about the future of the operation of ventrofixation (hysterorrhaphy) for the retroverted uterus. Although he says in one breath that if the abdomen is to be opened at all he prefers hysterorrhaphy to the folding operations upon the broad ligaments of Palmer, Mann and others, he soon reverses himself by prophesying that interference with subsequent pregnancies may lead to the preference for the shortening operation instead of the ventral fixation. It is also worthy of note that under the head of dysmenorrhea he treats of that peculiar condition of periodic intermenstrual pain known to the Germans as Mittelschmerz, an affiction often left unmentioned by writers on gynecology, and one that unfortunately can be neither explained nor relieved.

NEWS ITEMS

Dr. H. L. Avery has located at Walters, S. D.

Dr. M. Boeckmann has located at Thief River Falls.

Dr. W. M. Brown, of St. Paul, has located at Belgrade.

Dr. H. P. Ross has sold his practice at Campbell and will locate elsewhere.

Dr. Victor F. Rounds, Rush, '83, of Brainerd, died last month at the age of 53.

Dr. J. W. Clark has purchased the practice of Dr. W. F. Robertson, of York, S. D.

Dr. J. W. Clark, a graduate of the Ohio Medical University, has located at York, N. D.

Dr. Ludwig Lima, Hamline, '03, who is located at Audubon, was married last month.

Dr. J. W. Daniels and bride have returned to St. Peter from their bridal trip to California.

The new hospital building of Drs. McMasters & Lamb, of Sauk Centre, is ready for occupancy.

Dr. J. C. Tyvand, of Milton, N. D., will spend three months in post-graduate work in Chicago.

Dr. J. E. Corrigan, who formerly practiced at Canton, S. D., has decided to return to that place.

Dr. W. R. Ball, of Mitchell, S. D., was married last month to Miss Helen Jones, of Prospect, N. Y.

Dr. G. J. Gislason, a graduate of the Illinois Medical College, has located at Grand Forks, N. D.

Dr. Horace Clark, of Pierre, S. D., has moved to Groton, in the same state, and will conduct a drug store.

The Odd Fellows of the state will build a hospital at Northfield in connection with the home of the organization.

The people of Crookston have raised half the amount necessary to erect a building for new Bethesda Hospital.

Dr. K. E. Gryttenholm has returned to Zumbrota, and announces his intention to remain in practice in that place.

Dr. Emil S. Geist, who has been studying orthopedic surgery in Europe for three years, has returned to St. Paul.

Dr. Lancaster has returned to Fosston after an absence of several months spent in Boston and abroad in special study.

Dr. C. O. Van Capellen, of Hastings, has resumed his practice after having taken a post-graduate course in Chicago.

Dr. E. Y. Arnold, who has been practicing in Minneapolis for a couple of years, has resumed his old practice at Swanville.

Dr. F. J. Benn, Hamline, '03, now practicing at Kulm, N. D., was married last month to Miss Lizzie Kane, at Long Prairie.

Dr. Crile, of Cleveland, was visiting in Rochester last month, and took a hunting trip with Drs. C. H. Mayo and A. F. Kilbourne.

Dr. C. E. Johnson, of Appleton, will no longer maintain his private hospital, and the village is now considering the matter of a public hospital.

Dr. J. P. Sedgwick, of Eveleth, has gone abroad for a year to study medicine. He will go direct to Berlin and spend most of his time there.

The people of Albert Lea are thoroughly in earnest in their efforts to establish a public hospital with an equipment that shall be a credit to the city.

Dr. W. C. Aarons, "the bone-setter," of Hudson, Wis., was under arrest last week in Minneapolis for practicing without a license. He was held to the grand jury.

The Aberdeen District Medical Society, of South Dakota, held the best meeting in its history last month. It is the work of such societies that raises the standard of the medical profession.

Dr. Charles A. Dawson, a graduate of the homeopathic department of the State University, class of '03, who is now practicing at Glyndon, was married last month to Miss Burnice I. Potter, of that place.

The Winona County Medical Society, at its October meeting, elected the following officers: President, Dr. E. S. Muir, Winona; vice-president, Dr. H. F. McGaughey, Winona; secretary, Dr. J. B. McGaughey, Winona.

J. W. Pidcock, of Ogden, Utah, pleaded guilty, before Judge J. A. Howell, to the charge of practicing medicine without a license or certificate from the state medical examiners. The defendant had been warned repeatedly not to practice, yet a fine of only three dollars ($3.00) was imposed. So long as justice miscarries in this way the efforts of physicians to maintain a higher standard of fitness to practice medicine will be useless. The public alone can expect to suffer the consequences of such acts of its public officials.

A number of changes have been made in the State University Medical faculty. Dr. L. B. Wilson, in the department of pathology, has resigned, and at the end of the year will become pathologist in the private laboratory of Drs. Mayo and Stinchfield, of Rochester. Dr. J. E. Schadle, of St. Paul, becomes professor of diseases of the nose and throat, filling the vacancy made by the resignation of Dr. Laton. Dr. J. E. Moore, of Minneapolis, becomes professor of surgery, the chair of the late Dr. J. H. Dunn. Dr. H. H. Mullin, of Minneapolis, was appointed demonstrator of pathology and bacteriology. Dr. J. L. Rothrock, of St. Paul, becomes clinical professor of gynecology; Dr. W. R. Murray, of Minneapolis, clinical professor of nose and throat; and Dr. R. A. Campbell, of Minneapolis, clinical instructor of diseases of the nose and throat. Dr. Walter Ramsey, of St. Paul, was appointed clinical instructor of diseases of children, and Dr. J. E. Cross, of Minneapolis, clinical instructor in medicine.

FOR RENT

Centrally located office rooms suitable for a dentist or a nose and throat specialist. Inquire No. 2 Syndicate Block, Minneapolis.

POST-GRADUATE WORK

DOCTOR: If you want practical post-graduate work during fine season in the delightful city, write for particulars. NEW ORLEANS POLYCLINIC P. O. Box 797, New Orleans.

PRACTICE FOR SALE

I will sell for $250 a $1,500 practice in thriving village in best part of Minnesota; office furniture, including operating chair; good 4-year-old horse and buggy; free office rent; no opposition. Address C., care of NORTHWESTERN LANCET, Minneapolis.

NORTHWESTERN LANCET

A Semimonthly Medical Journal

VOL. XXIV NOVEMBER 1, 1904 No. 21

PNEUMONIA PATHOLOGY; EMPYEMA AS A COMPLICATION*

BY LYMAN SKEEN, JR., PH.D., M. D.

OGDEN, UTAH

Pneumonia from a pathological standpoint signifies an inflammatory process in the lung tissue. This inflammation may involve mainly the parenchyma or the skeletal tissue, or both may partake of the morbid process in varying degrees. Accessory organs, such as lymph glands, blood vessels, and nerves, from their close relation to other elements, rarely escape involvement.

There is with many medical men the idea that pathological observation necessitates the use of the microscope and elaborate preparation of tissues to be studied. While such is the case for detailed study and closer differentiation, yet a vast field of useful information about morbid anatomy is open to the unaided eye.

Accurate knowledge of the normal tissues and organs must of necessity precede a study of diseased processes. It is too often the case that healthy tissues are seen by the medical student only on the dissecting table. Under such circumstances those facts of color, consistency, size, and degree of moisture are anything but normal. With an absence of this knowledge of the normal, is it any wonder that many men doing surgical work fail to recognize diseased tissues? Too often surgeons of established reputation fail to recognize the nature of simpler diseased processes when exposed by the scalpel. An abdominal section brings to view a peritoneal surface studded with minute tumors. The question of immediate importance is whether such a process is one of miliary tuberculosis or the benign process of multiple fibrosis. The ability to answer this question at once means much to the patient as well as to the operator. No doubt many have encountered tumors, which, had their training included at first an accurate knowledge of the normal tissues followed by close naked eye observation of the varieties of neoplasms in the fresh state, they would have recognized at once.

To place the mental brand of cancer upon a patient with a non-malignant growth is no less to be deplored than when the cancer quack removes a sebaceous cyst with his arsenic paste, and records a cure of cancer. To inform a patient that a simple ulcer is syphilitic, and thus brand him as an outcast in his own mind, and possibly produce a syphilitic mania, is far too common an occurrence.

Only after coming into contact with methods of study of gross pathology in Austria and Germany can we appreciate its importance. In our own schools there is not the opportunity for such study; and where there is the material the right kind of teaching is absent. To handle organs and tissues from post-mortem rooms with gloved hands does not lead to close observation. Too often the student becomes interested only out of morbid curiosity.

Unless we are in a position to make an accurate diagnosis therapy must be uncertain. It is time for the shot-gun prescription to be replaced by the administration of drugs for a definite purpose.

There is no pathological process which should be better understood by the doctor than that of pneumonia. This much dreaded disease has claimed its countless thousands in recent epidemics. The bacteriological aspect of pneumonia has been well worked out. While a definite organism is the cause, numerous accessory organisms are found. Recent observers have closely associated the organism of la grippe with certain types of pneumonia. From a clinical standpoint we usually think of pneumonia as either lobar or lobular, because of the very different clinical course of the two. Careful observation of the morbid anatomy reveals other no less interesting types of the disease. No doubt many cases of clinically undiagnosed chest disease would be explained by more general knowledge among doctors of the pathology of the lungs.

---

*Delivered at the Utah State Medical Association, Ogden, Utah, May 10 and 11, 1904.

The types of pneumonia recognized by leading pathologists may be grouped into four divisions. Pathological research alone reveals the important characteristics of these types. The following notes taken from observations in the post-mortem room in Vienna and Berlin will serve to show the present understanding of the pathology of pneumonia:

I. LOBAR OR FIBRINOUS PNEUMONIA.

The clinical course of this type is well known to all. It is only when we examine the lungs on post-mortem examination that a clear understanding of the disease is obtained. Pathologically we find the following condition in the different stages:

a. Stage of congestion. Lung tissue dark red from blood; no solidification.

b. Stage of red hepatization. Lung solid in lobes from fibrin formation; red from blood.

c. Stage of gray hepatization. Lung solid in lobes from fibrin formation; gray because blood forced out of alveoli.

d. Stage of resolution. Lung softens from breaking down of fibrin and cells; fat and pus often present.

Morbid anatomy:

Naked eye observation shows—

1. Outer surface. Stages of hepatization. Lung solidified, lobes with sharp limitation; pleurisy with fibrinous adhesions.

2. Cut surface. Pneumonic area dry, granular, airless; cells not forced from alveoli on pressure.

The microscope shows contents of alveoli to be largely fibrin with cells in its meshes.

Liver, spleen, and kidneys show cloudy swelling with fatty infiltration.

Heart muscle is soft, brittle, and shows fatty degeneration.

Meninges congested, thus explaining delirium in pneumonia.

Empyema is a common complication of pneumonia. The case here presented is interesting in that it is typical, and illustrates the need of ample drainage to effect a cure.

A young lad, aged 18, had a severe attack of lobar pneumonia in 1901. Upon recovery a large amount of serous effusion remained in the pleural cavity. The physician in charge removed this fluid by paracentesis. Empyema followed, and the sixth rib was notched in the axillary line, and a tube inserted for drainage. There was apparent cure for a few months when a tumor appeared at the seat of last operation. This tumor was incised and a large quantity of pus escaped.

At this stage of the disease the case came to me. For some weeks a large amount of pus was discharged from a sinus. It was only possible to empty the cavity by deep inspiration and coughing. After getting the physical condition of the patient as good as possible, the following radical operation was undertaken to effect a cure:

About one and one-half inches of the seventh rib were removed in the scapular line. Puncture of the pleura allowed a quantity of pus to escape. Adhesions were broken up to make a communication between the new opening and the old sinus. The entire cavity was washed out for several weeks with 1-5000 bichloride solution through a double drainage-tube. Upon removal of the tube the irrigations were continued, and in order to close the old sinus tincture of iodine was put into the cavity. With the physical exercises prescribed this procedure resulted in a cure with complete closure of the sinus. The patient gained rapidly in weight, and one year after the operation continues entirely well.

II. CATARRHAL, LOBULAR, OR BRONCHO-PNEUMONIA.

Clinically this type is quite definite. Old age and childhood are its most frequent periods in life. We know this disease mainly as a complication of one of the epidemic diseases or of chronic sickness.

Pathologically, we find two varieties: one with nodules in different parts of the lung, clearly made out as involving lobules; and a second variety with involvement of the lower back part of the lungs. This variety presents much discoloration and edema from hypostasis.

Morbid anatomy:

Outer surface: lung soft, often with nodules; atalectasis in involved lobules. Color of lung, dark red, and in hypostatic variety much edema in back of lung.

Cut surface: dark red, moist; not granular; cells and fluid forced from alveoli on pressure; bronchial lymph glands swollen; also areas of hemorrhage present. The microscope shows the contents of alveoli to be small round cells, blood corpuscles, epithelial cells, and fat droplets.

Liver, spleen, and kidneys show cloudy swelling. Extensive adenitis in abdominal cavity.

Meninges congested, often with serous effusion giving paralyses.

Recent observations confirm the close relation of la grippe to this type of pneumonia.

III. Purulent or Septic Pneumonia.

This condition, as the name indicates, usually has a septic origin.

The varieties recognized are—

1. Diffuse variety from inspiration of vomit, pathological secretions, contents of mouth or nose. Diffuse gangrene is the usual outcome of this variety.

2. Metastatic variety, which originates from the breaking down of an embolic infarct, embolus usually being from valves of heart. Localized suppuration, often with definite abscesses in lung substance.

Pleura thickened with extensive adhesions.

The microscope shows pyogenic products, mainly as pus cells and bacteria, alveolar cells and round cells of inflammation are also present.

IV. Caseous Pneumonia, Chronic Pneumonia, or Chronic Tuberculosis.

This occurs in old age, and complicates tuberculosis. Certain occupations, such as coal mining, are factors in the cause.

Varieties:

1. Caseous bronchitis. Caseous nodules around bronchi; size dependent upon size of bronchus; often confused with tuberculosis.

2. Caseous pneumonia proper. Alveoli contain caseous inflammatory products; resembles fibrinous pneumonia, but less fibrin, and lung harder in caseous pneumonia.

Morbid anatomy:

Outer surface: lung hard, contracted caverna and scars often present, fibrous bands numerous.

Cut surface: dry, with cheesy appearance from degeneration of cell protoplasm and nuclei; pigmentation from coal dust and blood pigments. The microscope shows much fibrous tissue; alveoli imperfect; pigmentation and constricted blood vessels from atrophic changes.

The above grouping enables one to gain a more definite idea of pneumonia in all of its phases.

With greater knowledge of the pathology of this disease founded upon careful observation of diseased lung tissue, we may hope for better results from treatment.

DISCUSSION

Dr. H. J. Powers: I have had no opportunity to prepare for this discussion. I will say that I have treated a few cases during this fall with apparent success. It is a well known fact that in most of these cases, so far as we know, we do about as well with one line of treatment as another. I must congratulate Dr. Skeen upon getting up this paper, which is very elaborate, and I must agree with him so far as I am able. The paper was well written and seems to meet my ideas.

Dr. P. E. Jones: This is a most admirable paper from a pathological standpoint. I wish to consider but one phase of the subject. When we come to take into consideration the vital statistics gathered from our larger cities and the states of Massachusetts and Michigan, where they have been gathered with a fair degree of accuracy, we find that since the time I mentioned (1900) consumption has dropped back to second place, and that pneumonia now ranks it as the principal cause of death in these United States, it is certainly an important subject for medical men to consider.

I would like to dwell upon methods of prophylaxis, which is the most important phase of the subject from the general practitioner's standpoint. That it is an infectious disease is no longer questioned. The most frequent and common method or manner in which the infection is conveyed in epidemic lobar pneumonia is no doubt due to the careless disposition of the sputa. This indicates that the cases which the doctor has described so clearly, where we have the influenza in the beginning, are no doubt self-infected. Surely the time has come when it is the doctor's business and his duty to begin educating the laity along lines of prevention.

Dr. E. F. Root: I think the society is very much to be congratulated on being able to listen to so profound a paper as Dr. Skeen has given us this afternoon. I think the people of this state can congratulate themselves upon having as a member of the medical profession a man who is capable of doing what Dr. Skeen has done this afternoon. It seems upon hearing him read his paper that he could write such a paper as that every morning before breakfast, that it is a perfectly easy matter, but for the average physician it would take a very great deal of time. At any rate, it has required many years of hard work to be able to produce this paper, and to come up to that standpoint.

The teaching of the pathology of pneumonia is a teaching of the pathology almost of any structure of the body. It gives me some new thought in regard to the pathology of other parts that I have been more familiar with. I am unable to discuss a good deal of the pathology that the doctor has gone over, but I would like to take occasion to emphasize what he says in regard to the fibrous pneumonia, the pneumonia with pleurisy, where there is an affection more or less of the pleural cavity. I believe that these cases either die or are treated surgically, and in the surgical treatment of them the operation should be so effectual as to absolutely drain and allow a granulation of the pleura, even going further into the lung tissue. I was recently aware of a case that was probably of this type of pneumonia. The patient was a man of 58 years of age, who was said to be tubercular. No bacilli were found after many examinations, but his physicians had supposed him to be tubercular. There was an area of two or three inches in the lower lobe of the right lung in the front that seemed to be consolidated. He had pleurisy. At the consultation it was decided that an opening should be made and, if possible, drain this infected area in the lung. I would like to make the statement that I believe, after the opening and the drainage is established fully, whether in the pleura, in the lung or in any tissue, that as little interference should be made by the surgeon as possible. Allow the granulations to be undisturbed, and in that way have no re-infection from the granulations that might be opened up in process of handling. The pus is just as good a covering for the granulations as any artificial means we have at our command. The pus thoroughly protects from exposure the new tissues that form, and I fully believe in letting that just as much alone as possible, only caring for the discharged pus enough for the mere comfort of the patient.

Dr. Lyman Skeen, Jr. (Essayist): I certainly appreciate the spirit with which my effort has been received, particularly as this side of the question of pneumonia has appealed to me for a number of years, and especially in the relation of prophylaxis. The importance of pneumonia now is being recognized very generally. The danger of the sputa has now become a factor which we can no longer overlook. After a residence of a number of years in the East, where they are more familiar with pathology than in the West, it appears to me from my short residence in Utah that this phase of medical work is not up to the standpoint it should be. Anything we can do as a medical society to further that part of medical knowledge I feel will be a very great accomplishment indeed.

(Dr. Skeen here presented the patient upon whom he had performed the operation described in his paper, giving the history of the case before it came into his hands.)

When I took charge there was a large discharge of pus from the old sinus, and even this drainage did not empty out the contents of the cavity. When I undertook the operation, my object was to get as low in the pleural cavity as possible, and I undertook it at some distance from the site of the old incision. In my effort to establish perfect drainage I endeavored to break up adhesions by inserting tubes through which I could run a stream of water. Then for some months I was confronted with the condition of the partial closure of the sinus, and trouble at the site of the old operation. In order to close the cavity, I resorted to rather severe means, by putting into the cavity a number of drops of pure tincture of iodine at each dressing. As a means of applying pressure, I instituted exercises of the chest and deep breathing. One exercise which has been carried out for several months is done by inserting a rubber tube into a bottle filled with water and blowing the water over into another bottle. I feel that the pressure has resulted in closing up the cavity. The patient is entirely well, having gained about twenty pounds in weight.

PROF. DUNBAR'S HAY-FEVER INVESTIGATIONS

By Herman Bouman, M. D.

MINNEAPOLIS

The Hennepin County Medical Society on Monday evening, October 3, 1904, had the great pleasure of hearing Prof. Dunbar discuss his ten years' labor with hay-fever and his wonderful results. In his high position as Director of the State's Institute of Hygiene at Hamburg he was well fitted and equipped for the important work. John Bostock of London gave the first accurate description of hay-fever. Blackley of Glasgow did much work forty years ago, and came to the conclusion that hay-fever was caused by the pollen of most any plant. Studies were made by him of the various pollen grains floating in the atmosphere, and apparatus was constructed to count their number. His work left us without anything practical except the apparatus.

At the present time all writers agree that hay-fever is brought about only when a specific irritant meets a person individually predisposed to its action. The number of sufferers is steadily increasing. The disease is most frequent in England and America.

When Prof. Dunbar began his work, he found many conflicting opinions as to the etiology of the disease. For several years he thought, with Helmholtz, that hay-fever was a bacterial disease. He has since accomplished the following:

1. He has obtained the irritant pure and free from admixtures.

2. He can excite with the irritant all the symptoms of hay-fever outside of its critical season and independent of temperature and conditions of weather.

3. He has proven that the irritant affects susceptible people only, and that it does not evoke any symptoms in other people, even if used in much larger quantities.

Grasses were collected just before blooming, put in water, and placed in a sunny corner of the room. As soon as the blossoms began to open, sterile vessels were held under them, and the plant shaken. A fine, yellow powder was thus obtained. A few of the pollen grains were brought upon some part of the mucous membranes of a hay-fever sufferer. In a few minutes the man noticed a tickling, itching, burning sensation, followed soon by a clearly seen injection of the blood vessels and copious secretion. In non-susceptible persons there was no irritation. The pollen was kept in an exsiccator for a long time, and whenever it was used it proved as active as the fresh at every season. With the exception of the lily-of-the-valley he has found no other plant that possesses the poison in Germany. Here we have, so far as known, the ragweed and the goldenrod in addition.

Since the effective pollen grains (of the grasses and of lily-of-the-valley) had a smooth surface, while the non-active grains of the other plants were thickly beset with sharp prickles, it was reasonable to suppose that the symptom-producing element in the pollen was of chemical nature.

The substances obtained by extraction with ether and alcohol were without specific effect for susceptibles. The etherial oils were also put aside—

1. Because they produced violent irritation in normal as well as in hay-fever people.

2. Because, under natural conditions, the quantities that come in contact with the conjunctival and nasal mucous membranes are so extremely small that they cannot be felt. The pollen grains continue effective after extraction. The Stärkestäbchen, rod-like starch granules are remarkable bodies to be seen in the pollen grains of the grasses. They remain unchanged for days in water or in normal saline solution, but put into secretions of mucous membrane, tears, saliva, nasal secretion, or in blood serum at body temperature, they melt like sugar. If the moment of complete solution is watched for, the undissolved matter centrifuged off, and then tried on hay-fever sufferers, it is not effective, while the solution is.

The pollen loses its solubility when dried. It was triturated and put in normal saline solution for maceration. The mixture was centrifuged, and the precipitate appeared in layers, one of them entirely white, which the microscope showed to be Stärkestäbchen. Obtained pure by washing, it was found to be without effect. From the saline solution used all undissolved material was centrifuged off, and the albuminous substances (the presence of which was shown from the nitrogen content) were thrown down with alcohol. The precipitate contained the poison, and the extractions could be carried to such a degree that the residue was entirely inactive. The albuminous bodies gave a blue color with fresh tincture of guaiac and solution of peroxid of hydrogen. They are proteolytic, and have, besides, other actions of enzymes.

Prof. Dunbar carried a small vial with 5 gm. of Indian corn pollen while traveling. The material showed a tendency to liquefy, inducing him to add carbolic acid to stop possible bacterial action, as there was then no chance to investigate closely. Later he found the contents of the vial had lost the hay-fever poison, but still held several active enzymes. He has so far failed to stop enzyme action without destroying the hay-fever toxin.

By nature, then, the pollen toxin is an albuminous body, or at least is attached to one, and obtained by saline extraction and alcohol precipitations. It is a proteid of such toxicity to susceptible persons that 1-40 mgr. suffices to irritate their mucous membranes in a violent manner. Prof. Dunbar dissolved 1 mgr. of the toxin in 2cc of normal saline solution, and applied 1 drop.

Animals of the same species gave different reaction to the poison. A few rabbits perished soon after the poison had been injected, with rapid loss of weight; others would tolerate the same quantity of toxin almost without reaction.

Of the seven goats treated, most of them showed only slight reaction. One of them fainted after each injection, and one day died after having again been treated. Only after four months' treatment (8 days) he observed in part of the goats antitoxic effects, which were influenced but little by continued treatment. Of eight horses of ordinary breed some reacted little, and some not at all. One blooded horse reacted so violently upon a dose of toxin that was much smaller than the goats had borne well, that it seemed doubtful for several days if it would survive. Later several more reacting horses were found. After 0.25 gm. pollen, or as much toxin as is contained therein had been injected, they began to gape continuously, and occasional fibrillar muscular contractions occurred. A few hours later urticaria-like eruptions have been observed spreading over the whole body. Soon after the injected region began to rise, and in the course of twenty-four hours the swelling attained the size of twenty inches in diameter. It decreased and disappeared in a few days. In about four weeks, after four administrations of toxin, it was possible to demonstrate antitoxin activity in the blood. The method employed for testing was: One drop of pollen toxin solution, which produced violent irritation, was mixed with one drop of serum, and the pollen toxin failed utterly to act. In the course of several months the antitoxic power of the serum had increased so much that 1 drop of serum sufficed to neutralize 20-30 drops of toxin solution.

Prof. Dunbar has reason to believe that the serum will become still more powerful. He succeeded not only in neutralizing the toxin solution in vitro, but also completely relieved symptoms produced in susceptible persons at once.

The specific poison and its antidote having been found, the next problem presented is to put the latter in a useful form for actual practice.

Active immunization had been attempted (Dr. Prausnitz) and abandoned because it seemed too dangerous a procedure. Hypodermic injection of the antitoxin solution (passive immunization) was also given up for the risk it entailed. Prof. Dunbar himself was in collapse after a trial. Local application in nose and eye was settled upon. The liquid would not keep without phenol. Because of its irritating action it had to be employed as weak as one-quarter per cent., which does not preserve the fluid well. Horse serum, *per se,* is irritating to susceptible people even it dried. It was necessary to add an inert powder (milk sugar) to the dried and finely ground serum. The former would bring on enough secretion to dissolve the serum at once.

By the use of this powder Prof. Dunbar, himself extremely susceptible and passing through three hay-fever seasons from Germany over Scotland to this country, kept himself comfortable and free from symptoms. The use of the pollen antitoxin must be learned. It is a prophylactic chiefly for the hay-fever sufferers. As little as we expect to at once reduce, *ad integrum,* all pathological results of the diphtheria toxin with its antitoxin, so little can we change things when the clinical picture of the hay-fever is once established. Prof. Dunbar has asked us to begin early, and follow his directions closely, until we are familiar with the modus operandi. The goldenrod pollen and that of the ragweed must be met by their own antitoxin. Many used pollentin, the grass pollen antitoxin (rye, Indian corn, etc.) to combat ragweed and goldenrod hay-fever, and were disappointed.

The demonstrations given by the professor were watched with keen interest. That he was hampered in many ways, and that the solutions were certainly less active than when they left Hamburg, only makes the results obtained more important and brilliant.

Solutions used:

1. Concentrated, 1 mgr. toxin in 2 cc normal saline solution.
2. 1-10 dilution of it.

The following notes were kindly given by Prof. Dr. Wesbrook:

PATIENTS WHO THOUGHT THEMSELVES SUSCEPTIBLE TREATED WITH RAGWEED TOXIN

Patient.	Part.	Solution.	Reaction.
Dr. Nootnagle...	right eye	1-10	plus
Dr. Todd	“	1-10	“
Dr. Robertson ...	left eye	1-10	“
Dr. Powers	“	1-10	“
Dr. Bouman	“	1-10	“
Dr. Aldrich	left eye	conc't	minus
Dr. Hall	“	1-10	“

Symptoms disappeared from use of goldenrod antitoxin entirely, except in Dr. Nootnagle's case, who received too little antitoxin, so that the poison entered the nose.

CONTROL PATIENTS TREATED WITH RAGWEED TOXIN

Patient.	Part.	Solution.	Reaction.
Dr. Hunter	left eye	conc't	minus
Dr. Wesbrook.	"	"	"
Dr. White	"	"	"
Dr. Barton	right eye	"	"
Dr. Spratt	"	"	"
Dr. Nippert	"	"	"

SUSCEPTIBLE PATIENTS TREATED WITH RYE POLLEN TOXIN

Patient.	Part.	Solution.	Reaction.
Dr. Dunbar	left eye	1-10	plus
Mrs. Knappen	left eye	conc't	minus

The pollentin relieved symptoms.

CONTROL PATIENTS TREATED WITH RYE POLLEN TOXIN

Patient.	Part.	Solution.	Reaction.
Dr. Wilcox	right eye	conc't	minus
Dr. Wesbrook	"	"	"
Dr. Barton	left eye	"	"
Dr. Robertson	right eye	1-10	minus
Dr. Powers	"	1-10	"
Dr. Bouman	"	1-10	"

The last three were susceptible to ragweed and goldenrod.

Drs. Wesbrook, Jones, Watson, Todd, Hvoslef, Muckey, Head, Day, and others participated in the discussion. The following questions were commented upon:

1. What is susceptibility? Prof. Dunbar thinks it a neurotic condition due to disease of the central nervous system. It varies with each person in degree, and is at high and low tide in the individual in the course of the day.

2. Is hay-fever due to a pathological condition in the nose? The malady has been induced by hypodermic injections of the specific toxin and by applying it to the anal mucous membrane.

3. Does suggestions play much of a role?

Both Drs. Todd and Bouman were unwilling to believe themselves susceptible to goldenrod pollen until they had hay-fever from the respective toxin solutions.

4. If hay-fever is due to the specific poison discovered by Prof. Dunbar, can it be demonstrated to be present in the air and available for the hay-fever sufferer at certain seasons?

This question was answered by referring to the studies of Dr. Liefmann (Hamburg), who proved by his painstaking observations that the appearance of hay-fever and the presence of the specific pollen in the air were synchronous, and that the atmospheric changes governing the increase or decrease in the number of the special pollen had a corresponding influence upon the hay-fever symptoms lessening or intensifying them.

While Dr. Day suffered in Baltimore he did not suffer in Minnesota, nor did he re-act to the toxin used in his eye. There may be more plants producing active pollen besides those known to which a few people are susceptible.

When the meeting closed, at a late hour, Prof. Dunbar was made an honorary member of the Hennepin County Medical Society unanimously.

SURGICAL GYNECOLOGY*

By A. E. Benjamin, M. D.

Instructor in Gynecology, University of Minnesota

MINNEAPOLIS

Gynecological surgery now rests upon a practical and scientific basis. A better knowledge of the etiology and pathology of female pelvic diseases has resulted in a more rational form of treatment. The past experiences of specialists in this field of work are guide-posts in the present treatment of individual cases. The average practitioner is becoming a better diagnostician of female pelvic diseases. He is able to differentiate between a disease which demands local or general treatment and one demanding an operation. A number of women are therefore freed from the continual discomforts attending diseased pelvic organs, which were formerly left to nature's poor and inefficient attempts at repair. The physicians who may discuss the different forms of treatment for gynecological diseases will illustrate what benefits may be derived from electricity, heat, cold, antiseptics, massage, analgesics, diet, counter-irritants, etc. All cases, of whatever nature, must have the proper attention in a general way, such as proper food, hygiene, and the attention to the elimination of waste products.

---

*Read before the South Dakota State Medical Society, June 2, 1904.

It is my intention to bring before you the diseases which are distinctly surgical, and to demonstrate that other than surgical methods of treatment are of little avail and often a waste of time and money.

I shall not attempt to name all the diseases and conditions which should be treated as surgical from the first, but shall deal with only a few of them.

The most common disease, that later leads to surgical intervention, is that of gonorrheal origin. This, in nearly every case, results in a salpingitis. The consequent suffering due to this tubal infection is beyond description. The resulting peritonitis and inflammation of the contiguous structure, brings the sufferer near the point of invalidism. We should recognize early in this disease the probable course that it is to take, and adopt some preventive measures which will save a good deal of suffering and some at least of the pelvic organs.

The most troublesome cases to deal with when thus infected, are those in which there is a retrodisplacement of the uterus, or a prolapse of the uterus, ovaries, and tubes. Under these circumstances the pelvic organs become bunched, the inflammatory products are not so easily eliminated, and drainage is not so perfect. The pelvic organs lie below the normal circulatory plane, and therefore the congestion is greater and the inflammation of a severer type. The lumen of the tube becomes blocked, the fluid accumulates, and cysts may form and may later become infected. The contiguous structures are frequently involved. A perisalpingeal inflammation occurs and local peritonitis frequently causes cysts of the corpus luteum or Graafian follicles. These are occasionally infected, later with streptococci or colon bacilli.

How can we prevent some of these complications, lessen the suffering of the individual, and save from destruction some of these organs?

When the disease is recognized to exist as an endocervical inflammation, is the time to do the most good for our patient. All the general and local treatment should be considered, but, in addition, we should restore these organs to their normal position and proper level. After the primary acute local stage has passed, an Alexander's operation secures the desired result. The distance between the horn of the uterus and the extremity of the tube, is made greater, and facilitates drainage. The organs being nearer the proper plane are less congested, and the inflammation therefore is of a less severe type, consequently the tube may frequently be saved, the perisalpingeal inflammation prevented, and cysts of the ovary avoided.

Alexander's operation is not limited to these cases only. In any form of retrodisplacement it is applicable, providing there is no other intra-abdominal or pelvic trouble. Women who have a retrodisplacement endure a great deal of discomfort that is not experienced by one whose pelvic organs are in the normal position. The various diseases and conditions attending marriage and child-bearing are accountable for much of the female suffering. These complaints are greatly aggravated in one who has a retrodisplaced uterus, as has been pointed out in a previous paragraph. Therefore we feel safe in advising an Alexander's operation in young women, providing the uterus is found to be retrodisplaced to such a degree that trouble is likely to be caused sooner or later.

No one will deny the usefulness and necessity for doing a perineorrhaphy when a tear has caused the perineal body to lose a portion or all of its functions. When thus injured no form of medical or electrical treatment can ever supply the necessary tone and strength which are essential for the maintenance of the normal level and position of the pelvic and abdominal organs.

Equally as strong an argument may be brought forward for the performance of a trachelorrhaphy, even in lacerations of small extent. We are frequently surprised at the number of treatments that a woman will submit to by self-termed "Specialist in Diseases of Women." They are encouraged to believe that the ulcers will heal and the leukorrhea cease by a "course of treatments." It is true in some cases that treatments make the woman feel better temporarily; however, the reverse is often the case.

When a laceration of the cervix occurs, it will seldom unite by primary union. More or less cicatricial tissue formation results, making subsequent child-bearing attended by a greater laceration, or the labor is more difficult. The ulceration resulting from infection is as a rule associated with an endometritis, and frequently a salpingitis. Subinvolution follows in consequence of these tears, the uterus is heavier, becomes congested, inflamed, and prolapsed to some extent.

The possibility of cancerous growths occurring in the cervix that is not intact, alone, should urge us to follow the conservative course, and restore this portion of the uterus to its normal condition. Care should be practised in selecting the operation and in performing it. The choice usually lies between Schroeder's and Emmet's. The former is productive of greater relief in most cases, as it removes all of the diseased areas and leaves a short, but patulous canal.

A great deal may be accomplished in the way of relieving the symptom of dysmenorrhea. When it is due to stenosis of the os, a thorough dilatation, severing the fibers at the neck with a bistoury, packing the cavity and canal with gauze, and leaving the drain for four or five days, accomplishes much good. Obstruction of the canal due to other causes, can be treated, and the symptoms relieved by an operation, such as removing the growth, etc.

Ovarian dysmenorrhea, due to a thickened fibrous envelopment, is frequently cured by dissecting off the outer coat of the ovary, partially or entirely. It facilitates ovulation of a less painful character, and prevents the formation of cysts of the unruptured follicles. When there is present a diseased tube, and adhesions and the attending conditions resulting from a salpingitis, the pain is relieved by a laparotomy performed with conservative ideas in mind. When many complications are present, the surgeon should select an operation which will give him an opportunity to correct all of the complications at the same time. When an infection of the uterus and tubes has occurred, that is progressing along the course of abscess formation, an early operation performed to remove the serous exudate, may avoid an abscess, and save the destruction of a great deal of tissue.

A post-vaginal incision and drainage under these circumstances is the most conservative and ideal way of treating these cases. In fact, all collections of pus and serum, when situated low down in the pelvis, are best removed by a vaginal incision and drain. Tamponing, local treatment, and internal medication can accomplish little, if any, good, compared with the results obtained by surgical means.

You will all acknowledge that an extra-uterine pregnancy should be treated by a laparotomy. When done early the operation is at times lifesaving.

There have been a great many methods proposed for the treatment of uterine fibroids. Electricity had its day, but the strongest advocates of that method of treatment now concede that surgical work alone stands forth as the only sure and safe means to employ in most all cases. It is not necessary to do hysterectomy in many of the early cases. Enucleation of the one or more fibroids can be done quickly and safely when not too large. This method preserves the important sexual organs, and avoids the possible malignant degeneration or infection. It also avoids the great loss of blood, the lowering of vitality, and the invalidism of many patients. When done near the menopause and where there is a possibility of the development of any carcinomatous growths, a total extirpation of the uterus is the most advisable thing to do.

Dr. Charles P. Noble, in the Journal of the A. M. A., May 21, 1904, sums up the percentages of serious complications of uterine fibroids in 988 cases, as follows:

Sarcoma developed in	1.5	per cent
Adenocarcinoma of the corpus uteri developed in	2.5	" "
Carcinoma of the cervix developed in	1.0	" "
Necrosis of the tumor occured in	6.1	" "
Cystic degeneration occurred in	3.4	" "

He also concludes, after going over the ground thoroughly, in the following words:

"These facts are incontrovertible; and when added to the probability of the continued growth of the tumor in any special instance and to the probability of various complications arising outside of the tumor and of the uterus, it seems to me clear that any one having an open mind must be convinced that the conditions surrounding any particular instance of fibroid tumor of the uterus must be exceptional for it to be less dangerous for a woman to retain her tumor than to have it removed by a competent gynecologist."

Carcinomatous growths of the cervix and body of the uterus cannot be as safely and easily benefited even by the *x*-ray as by a complete and early hysterectomy. In this disease, as well as a number of others, an operation should not be the last thing advised.

The conservative physician and surgeon of today will recommend an operation early in order to accomplish the most good. It is not chosen as the last expedient, and therefore the percentage of recoveries and number of cures are steadily increasing.

The possibility of a malignant degeneration of a dermoid cyst should encourage us to advise an operation without delay. Cysts of the ovaries, when small, can be so quickly and easily removed, leaving healthy ovarian tissue for ovulation, that the physician should not hesitate to send the case to a surgeon. Parovarian cysts should be treated in the same manner.

Prolapse of the uterus with cystocele and rectocele can be so benefited by an operation that women afflicted with this malady should not be compelled to endure all the discomforts attending such a condition.

SOME EMPYEMAS OF THE MAXILLARY SINUS

By Robert A. Campbell, M. D.

MINNEAPOLIS

Case 1.—In December, 1903, Mrs. L—— presented herself at the University Dispensary complaining of a chronic discharge of pus from the nose and throat. The discharge had started five years previously from no obvious cause, a sudden gush of brownish fluid marking its advent. Inspection of the nasal cavities showed the presence of yellow pus in both. In the throat pus in all stages of dessication, from liquid to dry crusts, covered the posterior wall and posterior rhinoscopic inspection showed this pus coming from the nasal cavities.

After removing the crusts from the throat and thoroughly cleansing the nose, and waiting a few moments, the pus re-appeared in the nasal cavities at the same point in each, namely, under the middle turbinate near the anterior end. Several reexaminations proved this to be the place where the pus entered the nose, and from whence it ran to the throat. Several trans-illuminations on different days with Dr. Chevelier Jackson's eight-candle power lamp showed both frontal sinuses illuminated and both maxillary sinuses dark. Palpation with the probe failed to locate any diseased areas in the ethmoid bone on either side.

These facts and continued study of the case led to the diagnosis of bilateral maxillary sinusitis.

In March an operation was made on the right side; a drill was entered in the socket of the absent second bicuspid tooth, and a hole bored through the aveolar process into the sinus. The sinus was drained of pus, irrigated, and packed with iodoform gauze. The packing was changed every day for six days, when a rubber drainage tube was placed in the opening, and the patient directed to wash out the cavity twice daily with a sterile aqueous solution of sodium chloride, sodium bicarbonate, and sodium borate, five grains of each to the ounce. Four weeks of this treatment sufficed to stop the discharge of pus, when the drainage-tube was removed, and the opening allowed to close. From the moment of operation to the present time the nose on that side has been free from pus.

At the City Hospital early in July the sinus on the other side was opened through the alveolar process, and the pus evacuated. Treatment proceeded as on the opposite side, but for eight weeks the pus flow continued unabated, necessitating constant irrigation and frequent changing of the drainage tube. On Sept. 2 I cleansed the sinus and injected, by means of a glass syringe, ¼ ounce of silver nitrate solution of the strength of 40 grains to the ounce. By Sept. 5th there was a diminution in the amount of pus. On Sept. 9th the patient reported that there was no discharge. On Sept. 19th, there still having been no pus discharge, the drainage-tube was removed and the opening permitted to close; closure was nearly completed on Sept. 26th.

The patient's nose and throat have remained entirely free from pus since the operation on this side. Both sinuses now freely transmit light.

CASE 2.—In July, 1904, Mrs. O——, of Annandale, presented herself at Dr. Laton's office while Dr. Laton was in Europe. She complained of a chronic pus discharge from the left nasal cavity. Inspection showed an enlarged middle turbinate with pus flowing on both sides of it. Palpation with the probe showed a necrosed area on its septal side and necrosed bone in the ethmoid. I removed the interior end of the middle turbinate, and curetted the anterior ethmoid cells, with the result that the discharge decreased in amount. Trans-illumination showed the maxillary sinus on this side to be dark, while the frontal sinuses and the right maxillary sinus transmitted light.

The patient went home, but returned the last of August to Dr. Laton's office. Dr. Laton referred her to me. I found her complaining of pain in the region of the hiatus semilunaris. Pus still flowed from the region of the middle turbinate. Trans-illumination gave the same results as before. I endeavored to enter the end of a silver canula into the sinus through the natural opening in the middle meatus of the nose, and finally succeeded in doing so. Through this I washed out the cavity, removing less than one-half ounce of pus. Trans-illumination now showed some light passing through the cavity giving a faint glow in the infra-orbital region. The nasal cavity remained free and clear for three hours; then it began to receive pus from the sinus again. The pain was relieved by the irrigation. The second day following irrigation brought away the same quantity of pus, pus re-appearing in the nose after the same perod of time. The patient went home intending to return for a protracted stay in the city and undergo an operation on, and treatment of, the sinus.

CASE 3.—On Sept. 11, 1904, I opened Miss S——'s right maxillary sinus through the aveolar process and evacuated its purulent contents. In this case the history of chronic one-sided nasal and post-nasal discharge covered ten to twelve years, and dated from a pneumonia. Pus on every examination appeared in the middle meatus. Light was transmitted from the lamp in the mouth through the left sinus, but not through this one. An exploratory puncture through the wall of the inferior meatus of the nose demonstrated the presence of pus in the sinus, so that the diagnosis was established. For three weeks prior to operation, daily irrigation of the sinus through the ostium maxillare, made possible by removal of the anterior end of the middle turbinate, had failed to cause a diminution in the amount of pus.

After the sinus was opened through the aveolar process it was packed each day for six days with iodoform gauze, the sterile salt, soda, and borax solution used twice daily afterwards. On Sept. 25th there was less than one-half dram of pus washed out with each irrigation. On Oct. 2 I injected 40 gr. to oz. of silver nit. sol., and on Oct. 12th the sinus was free from pus.

CASE 4.—On the same day that the last case was operated upon a new patient came to my office. He gave the following history and symptoms: He took employment in one of the flour mills in 1883, and worked there until 1903. The dust of the mill he thinks was the cause of his so-called catarrh. He had had a chronic discharge of greenish-yellow pus from the throat and right nasal cavity since 1891. His health in other respects has always been good. Inspection showed the pus appearing in the middle meatus of the nose on the side affected. Light did not pass through the maxillary sinus on that side, but did on the other side. After shrinking the soft tissues of the middle turbinate with solutions of adrenalin and cocaine, the silver canula, bent at a point seven-sixteenths of an inch from its end to make an angle of approximately 135°, readily entered the ostium maxillare. Irrigation with a warm sterile normal salt solution brought out somewhat over a dram of pus in nummular form.

The diagnosis of empyema of the right maxillary sinus seemed established. Daily irrigation with the same solution caused a gradual diminution in the amount of pus present, and in eight days from the beginning of treatment an apparent cessation of pus discharge, the irrigating solution coming away clear.

Pus reappeared in the nose, however, six days after the last treatment. and was noticed by the patient, who came on the seventh day for a cleansing. Irrigation brought a very small quantity of the same pus. A small quantity of pus has continued to come from the sinus since, and for a complete cure of the case an operation through the canine fossa will probably be required.

The two cases were operated through the alveolar process because of the existence of almost totally destroyed second bicuspid teeth or diseased roots. The point of election otherwise would have been the canine fossa.

Case 5.—Mrs. W——, a large, fleshy, well nourished woman, aged 35, appeared at the University Dispensary Oct. 17, complaining of headaches and a one-sided chronic nasal discharge. She had had no serious illness since childhood prior to one year ago. At that time she had very severe pains at the left supraorbital foramen and above it and to the outer side of it, which continued for a little less than five weeks, and terminated with the inauguration of a pus discharge from the left nasal cavity. This discharge has continued to the present time. The pains were severest between eleven o'clock in the morning and two in the afternoon, sometimes accompanied by nausea and confining her to her bed. Eight years previously she had had a light attack of pains in the same region, lasting four weeks, but it entirely cleared up leaving no after-effects. The patient cannot account for the onset of her pain either time, but in the light of our investigations the pain in her head was due to attacks of acute sinusitis, the last attack becoming chronic. During the past year she has noted that when the discharge stopped making its appearance for a few hours the pain returned. Her present subjective symptoms are some pain at intervals about the orbit mostly above and outward from it, a continuous discharge of greenish-yellow pus from the left nasal cavity. Some obstruction to breathing in both nostrils, but more pronounced in the left. The objective symptoms are a straight nasal septum inflamed on its left surface, left inferior turbinate hypertrophied and edematous, middle turbinate in same condition and its mucous membrane showing a tendency toward polypoid degeneration. The middle meatus anteriorly is filled with pus and contains granulation tissue. Transillumination shows no light passing through the left maxillary sinus while it does through the right. Both frontal sinuses transmit light. There is no pain upon making pressure over the left maxillary sinus. Persistent and repeated efforts to pass a silver canula into the ostium maxillare after using cocaine and adrenalin were futile. I felt justified in making an exploratory puncture of the maxillary sinus wall. A curved trocar was passed into the inferior meatus of the nose a distance of about an inch and a quarter and pushed outward through the thin bony wall into the sinus. The result was an instant gush of greenish-yellow foul pus through the canula upon withdrawal of the trocar, as though the cavity contents had been under some pressure. Between two and three drams of pus was thus washed out of the sinus. On the second day after the patient reported, saying that her pain had been relieved. An operation will be made on this patient at the hospital next week. An opening for drainage will be made in the alveolar process through the socket of an absent first molar tooth and the usual treatment follow.

THE HOSPITAL BULLETIN

ST. BARNABAS HOSPITAL

MINNEAPOLIS

ATRESIA OF THE VAGINA

In the Service of Dr. G. G. Eitel

Minnie Z——, school girl, aged 15, entered the hospital July 26, 1904, complaining of intermittent attacks of severe cramp-like pains of which there have been five in all, accompanied by rise of temperature, vomiting, and constipation.

Family and past history are uneventful, except that she has never menstruated.

Present Illness.—Attacks of pain in the fall of 1903, the last one occuring two weeks ago. A tumor mass has been gradually forming on the right side in the inguinal region. She has been losing strength, and for last few weeks has been running a considerable temperature.

Physical Examination.—An undeveloped anemic-looking girl. Lower abdomen is extremely sensitive on palpation. A large mass can be felt to the right a little below the umbilicus, and a smaller one correspondingly located upon the left. There is complete absence of a hymen. Temperature 101°.

Operation.—An abdominal incision in the mid-line was first made. The tumor on the right was found to be made up of dark, partly organized blood in the greatly distended tube and ovary, the latter being unrecognizable. The entire mass was removed. The distension of the left tube was not so great. A linear incision was made in the tube, its contents pressed out, and the incision then closed with fine catgut. The ovary contained several cysts, which were punctured, but it was otherwise in fair condition, it was allowed to remain in situ.

The uterus, which was about the size of one six weeks' pregnant, was suspended to the abdominal wall, and the wound closed with catgut.

A perineal incision was then made. No vagina was present, but about one and a half inches above the perineum was a large dilated space containing dark blood. The vault of this space was punctured, and the uterus likewise drained of a large quantity of blood. No cervix could then be made out, but it was afterwards discovered, small and rudimentary, high up in the abdomen where it had been pushed by the accumulation of blood below. The uterus and space below were thoroughly irrigated, and a gauze drain inserted after stretching the line of incision as much as possible.

Shortly after the operation the patient began to suffer intense pain, and her temperature, which had fallen to normal, gradually rose again. Her condition became serious, and she was again taken to the operating-room. The abdomen was opened under cocaine, and a large amount of cloudy serum was allowed to escape.

After this second operation, the temperature fell to normal, and improvement at once began. It had been the intention to perform a plastic operation to form a new vagina, but her condition did not seem to warrant this at the time, and she left the hospital.

A CASE OF EXSTROPHY OF THE BLADDER

In the Service of Dr. G. G. Eitel

Charley S——, aged 5 years, entered the hospital Oct. 21, with exstrophy of the bladder.

Family History, unimportant.

Past History.—Had always been a healthy child. No retardation in walking.

Physical Examination.—A large, healthy boy, appearing to be at least seven years of age. The lower part of the anterior abdominal wall is wholly lacking. The pubic symphysis is also wanting, the pubic rami being separated for at least an inch and a half. In the pubic region a rounded mass appears the size of a fist, in color a dark purplish. The surface is granular and indurated in patches, and it is extremely sensitive. The ureters open to the surface of this mass. The external genitalia were rudimentary and malformed.

The operation consisted of transplanting the ureters into the sigmoid flexure of the colon, and dissecting off the bladder, after which the walls of the abdomen were sutured together.

The patient died the second day after operation of general peritonitis.

GONORRHEA IN A YOUNG CHILD

A little girl, aged 3½ years, suffering from gonorrheal vulvitis, has recently entered St. Barnabas Hospital in the service of Dr. Franklin Wright.

The disease was contracted from the child's father, in whose bed she slept. The diagnosis was confirmed by the microscope.

MURRAY HOSPITAL

SALT LAKE, UTAH

A CASE OF OBSTRUCTION OF THE INTESTINES BY A LARGE GALL-STONE WITH AUTOPSY FINDINGS

In the Service of Frederick A. Kiehle, M. D.

West Jordan, Utah

Mrs. T. W——, German, age 63, weight over 200 pounds, fatty tissues, large pendant abdomen.

The patient had lost all her teeth, and on account of aversion to using her artificial set, frequently ate with "bare gums," suffered from chronic constipation, and was an habitual user of cathartics.

Her previous history is marked by frequent seizures of indigestion, and a sub-acute gastritis, which she referred to as her "bilious attacks." During these vomiting would often continue several days, but they were invariably relieved by divided doses of calomel.

June 29th. She was taken sick in the early morning with one of these characteristic attacks, and vomited in a short time a large quantity of watery, bile-tinged fluid. I saw her first that afternoon. Pulse, 90; temperature, normal; tongue, dry and yellow-furred; no abdominal distention; no localized pain. The last bowel movement, a slight one, had been twenty-four hours previous, and consequent upon taking two "cascarets," as she had been doing of late, night and morning.

During the next night and day she continued to suffer the terrible distress of unabating nausea. No relief was obtained by the administration of calomel, and bland substances as cerium oxalate, soda bicarb., oleum ricini, etc., were emitted at once. Medicated enemata persistently given by the long rectal tube were uniformly discharged as given. A pint of warm olive oil given high in the bowel was retained two or three hours, and passed without effect. Vomiting and retching continued at intervals of from fifteen minutes to two hours.

Thirty-six hours after the onset of the first symptoms the vomiting became distinctly fecal, and there was marked hippocratic facies.

Despite the absence of the usual localizing symptoms it was evident that some obstruction of the bowel existed. Dr. Chas. G. Plummer, of Salt Lake City, saw the case in consultation at this point, and was associated in its further management. Patient was removed to Murray Hospital. Operation was strongly advised, but was refused despite the probability of fatal termination without surgical interference. The pulse crept up to 100-108; temperature 99°-100°. Strength was maintained by nutritive enemata every four hours. Strychnine, gr. 1-30, and atropin, gr. 1-100, were administered hypodermically every four hours throughout the sickness.

July 2. Vomiting became of lighter color and watery. Later in the day vomiting ceased altogether; pulse, 112. Patient is gradually weakening. Enemata had been given at intervals of a few hours from the first,—saline, glycerine, turpentine, ox-gall, oil, etc.,—which had been expelled clear, until July 3d when they showed some coloring, and considerable flatus came away. Encouraged by this sign, by the absence of vomiting, and by the retention of some nutriment, per os, in the hope of temporarily supporting her strength to the point of passing what was assumed to be a fecal accumulation, the patient was given a quart of saline by hypodermoclysis under the breasts and in the flanks, digitalin and whisky hypodermically, and saline by the bowel. These measures were followed by the passing of considerable gas, but nothing more.

The urine shows large content of indican; no sugar; no albumen.

July 5. Enemata contained some particles of feces. At 6 p. m., after 60 hours of quiet, she resumed fecal vomiting.

July 6. Patient urinates involuntarily. More gas and some scybala, of light yellow color, were passed. Restlessness and cyanosis increasing. Complains of severe pain in abdomen, but cannot localize it. Relieved by hypodermic of morphia, gr. 1/4. Vomiting again ceased. Colon is distended, but at no time has abdomen been tense.

July 7 and 8. Some nausea, but no vomiting; pulse, 105-120, regular and of good quality; heart sounds, normal; temperature, 99-101°; respiration, 26-32; passed 1/2 pint of scybala.

July 9. Sank rapidly, and died at 9:45 a. m.

POST MORTEM

Examination revealed a large gall-stone lodged in the ileum five feet above the ileocecal valve. The stomach and the bowel above and below the obstruction were empty and undistended. For the distance of ten inches below the point of obstruction, the lumen of the bowel was narrowed to about one-half its natural diameter. Intestinal wall and peritoneum at no place showed any inflammatory change whatever. Appendix, kidneys and pelvic viscera were normal. Death probably resulted from exhaustion. The stone, which was of the cholesterine type, weighed 9¼ gms., and was 3+ cm. in diameter.

There was an old pathological anastomosis between the gall-bladder and the duodenum. The gall-bladder had atrophied and was represented by a remnant sac, containing a few drops of pus. The ducts were intact.

It is of interest to note:

1. The insidious beginning of a grave condition, the onset being marked by no more than an attack of so-called "biliousness."

2. The absence of symptoms that usually point to, and help to localize, acute intestinal obstruction.

3. The entire cessation of fecal vomiting after once established; at two periods (1) for sixty hours beginning three days after the onset of the illness, and (2) for thirty-six hours prior to death.

4. There was no history of previous gallstone colic, or of attacks of pain during all the time this extensive pathological degeneration between gall-bladder and duodenum was taking place.

CLINICAL MICROSCOPY

CONDUCTED BY GEORGE DOUGLAS HEAD, M. D.

PASSIVE CONGESTION OF THE KIDNEYS

The classification of the various forms of diseases of the kidneys has been very indefinite, and too little attention has been paid in the past to the different pathological conditions upon which to a great extent depends treatment. Any patient having albumin in the urine has been relegated to that vast class, Bright's disease, and put upon milk diet. Von Noorden in a recent work on nephritis strongly condemns milk because of the irritation of the kidney structure by the phosphorus, which is a constant ingredient of milk.

One of the diseases of the kidneys in which albumin is present that has been entirely overlooked or classified by the large majority of writers on diseases of the kidneys as an acute nephritis, is passive congestion. Even such good authorities as Hare, Musser, Lenhartz, and Vierordt merely mention it in passing to the more serious nephritides. Bartels and a more recent German authority, Seube, because of the entirely different method of treating this condition, call attention to the necessity of a careful differential diagnosis. Hektoen and Leube have each made many experiments upon animals. When the renal vein is ligated there is a decreased velocity and a decreased pressure of the blood-current upon the glomeruli; and a decreased activity of their function. There is an increased pressure in the vein of the uriniferous tubules, and a large quantity of solids is excreted.

A decrease, therefore, in the quantity of water and an increase or normal elimination of solids would result in a higher specific gravity, deeper color of the urine, and less amount excreted. When such a condition exists albumin appears.

Passive hyperemia is never a cause, but a result of some altered condition in some other organ. A weakened heart muscle, an uncompensated valvular insufficiency and stenosis of the mitral valves or an emphysema may cause this condition. Tumor, embolism, or any condition which brings mechanical pressure upon the vena cava inferior or renal vein will produce these symptoms.

There are occasional blood corpuscles seen in the urine, but the albumin is not accompanied by casts. The pulse is very markedly different from that of acute nephritis with which this condition is so often confounded. The pulse of weakened heart is soft, slow, and full, while that of idiopathic hypertrophy or compensatory hypertrophy of valvular lesions is firm and rapid, with marked tension. When functional heart murmurs are present in an hypertrophied heart, the condition is often mistaken for mitral insufficiency.

In acute nephritis, on the other hand, large quantities of blood, albumin, and casts, mainly of the hyaline and granular variety, are present with an increased amount of urine and decreased specific gravity.

Since this condition of passive hyperemia of the kidneys with albumin and increased specific gravity and color, a decreased quantity of urine, and no blood is due to a weakened heart, all of these conditions can be relieved by the judicious use of the fat-free digitalis, strychnia, and tonics. A differential diagnosis is often made between this condition and contracted kidney of chronic interstitial nephritis, in that the symptoms are not relieved by the same treatment.

If after a few days albumin still exists and a few casts appear, there has been present an acute nephritis at the same time.

The causes of eclampsia are always sought, and there is a theory that seems to be gaining ground, namely, that eclampsia is due to pressure. Anemia of the kidney occurs from the pressure of the uterus upon the renal arteries, and when the pressure is relieved from the kidneys, large quantities of albumin are released. This is why albumin appears immediately after attacks. There is at the same time an absorption of some toxin either due to the retained albumin or from some other degeneration, which cannot be eliminated in sufficient quantities by the overtaxed kidney to prevent an attack.

Congested kidney is a common accompaniment of pregnancy, but when to the decreased urine of increased specific gravity is added an increasing number of casts and a decreased elimination of urea the dangers of eclampsia are multiplied. A continued hyperemia of the kidneys produces an infiltration of hemorrhage areas in the capillaries, the epithelial cells are filled with pigment granules from the hemoglobin in the corpuscles. The kidney becomes harder, smaller, and dark red with the capsule adherent. The connective tissue thickens, but has very little effect upon the glomeruli. There is a marked degeneration of the tubules, while areas of round-celled infiltration appear detached from their basement membrane. The tubules disappear before the glomeruli, and if this condition remains long enough the transition to the granular kidney is very easy. This destruction of the tubules is due to the congestion of the dilated veins of the uriniferous tubules.

D. EDMUND SMITH, M. D.

EFFECT OF HIGH ALTITUDES ON THE BLOOD

It has been known for a long time that high altitudes tend to increase the number of red corpuscles in the circulating blood. Kemp (Johns Hopkins Bulletin, May, 1904, page 177) gives the results of investigations carried on to determine the effect of high altitudes, not only upon the number of red-blood corpuscles, but also upon the percentage of hemoglobin, number of leucocytes, and blood platelets. There were five persons in the party which started at Champaign, Ill., going first to Cripple Creek, and later to Pike's Peak, and then back to Champaign. Complete blood studies were made on all the members of the party at the various points visited.

As a result of their investigations the following conclusions seemed justified:

1. The higher the altitude the higher becomes the number of red-blood cells in the circulating blood.
2. The red-blood count in the morning was from 600,000 to 900,000 higher than the afternoon count.
3. The hemoglobin curve rises and falls in a general way with the rise and fall in the number of red-blood cells.
4. The leucocytes are not changed in number or kind.
5. The blood platelets are increased in much greater proportion than the red-blood corpuscles.

Kemp makes the interesting statement that he found hemoglobin in some of the blood platelets after being at Cripple Creek ten days, and is of the opinion that the blood platelets are earlier forms of the red-blood corpuscles, a theory which heretofore he has been unwilling to accept.

In the discussion of Kemp's paper Dr. Osler stated that while he had always been much interested in blood platelets and had spent much time observing them, it had never been his good fortune to catch one "blushing."

G. D. H.

CAMMIDGE'S URINE TEST FOR CHRONIC PANCREATITIS

At the present time too little is known concerning the diagnosis of diseases of the pancreas, and any symptom or test which will be of aid in differential diagnosis will be eagerly welcomed.

Trevor (The Practitioner, April, 1904, page 588) refers to a urine test offered by Cammidge which he believes is of value. The test is as follows:

Boil a few cc. of urine with an oxidizing agent for a short time, and then subject the oxidized urine to the phenylhydrazin test. An abundant crop of delicate yellow needles arranged in sheaves or rosettes, is produced if chronic pancreatitis exists.

Urines from normal patients or urines containing bile or increased quantities of uric acid did not give the test. The phenylhydrazin test referred to is made as follows:

Treat the urine with a gram of phenylhydrazin hydrochlorate and one gram of sodium acetate. Warm until the salts have dissolved, a little water being added if necessary. The test-tube is then placed in boiling water for 20-30 minutes and then transferred to a beaker filled with cold water.

G. D. H.

NORTHWESTERN LANCET

A SEMIMONTHLY MEDICAL JOURNAL

The Official Organ of the Hennepin County Medical Society

W. A. JONES, M. D..................EDITOR

Editorial Office, 515 Pillsbury Building

W. L. KLEIN, PUBLISHER

SUBSCRIPTION, $2.00 A YEAR.

839-840 Lumber Exchange.....................Minneapolis

NOVEMER 1, 1904

THE WORK OF PROF. DUNBAR

Dr. Dunbar's hay-fever investigations are so important, and are so full of promise, that we have wanted our readers to know all he said in his recent address before the Hennepin County Medical Society; and therefore we give in this issue an admirable report of his remarks and experiments, which was prepared at our request by Dr. H. Bouman of this city.

The report is very complete, and gives a very comprehensive idea of the work and claims of Dr. Dunbar.

CITY WATER SUPPLY

The city of Minneapolis is discussing a possible water supply in which pure water may be obtained without bankrupting the city. Various sources have been considered, estimates made, and plans for filtration advised without reaching a conclusion. A University professor has suggested the sinking of several artesian wells, and claims that an abundant supply of water may be obtained at very moderate cost. The estimated cost of artesian water supply is so moderate that it is looked upon as a fairy tale. The suggestion should be seriously considered, particularly if the wells could be located near the new reservoir. The cost of ten or even twenty wells would be less than the equipment of one pumping-station, and the water would be pure and free from contagion. The supply would certainly last until some other source could be discovered.

The water supplied to the city from the polluted river is a constant source of danger. The health authorities are alive to this fact, but are powerless to change the situation at present. The Health Commissioner keeps the people advised, and urges the need of thorough boiling before the river water is used for internal consumption. For a time it seemed as if a remedy for purifying the waters had been found. The germicidal power of copper and its salts was urged as a preventive of typhoid fever. The theory is still to be proven. Investigations have shown that the typhoid bacillus disappears in forty-eight hours if water is kept in copper vessels, but the disappearance is not due entirely to the action of the copper, but in part to the natural destruction of bacilli in water alone. The introduction of the salts of copper sulphate into drinking water must be done with mathematical accuracy, in order to avoid the formation of poisonous compounds, yet Dr. Geo. T. Moore, of the Department of Agriculture, is quoted as saying: "I am perfectly willing that the press should say for me that the death-rate in any community from typhoid fever, so far as the disease is caused by infected drinking water, may be wiped out by the scientific use of copper as a germicide." The State Board of Health of Illinois became alarmed at the publicity of the quotation, and under the direction of Prof. John H. Long, of the Northwestern University, undertook a thorough and painstaking investigation of the subject. At the present writing the investigation is still progressing with a promise that the truth or error of the assertion will be given to the public. The old, time-honored custom of disinfecting typhoid stools with a strong solution of copperas is still in use, but if such drastic measures were applied in a reckless and unscientific manner to the drinking water of private houses or city plants the remedy would be worse than an epidemic of typhoid.

The introduction of copper or its salts into a city reservoir, in proper proportions, would doubtless temporarily clarify a certain part of the water supply. The amount would of necessity vary from time to time, and the dangers of accumulation of copper salts would be a constant source of anxiety. Perhaps some scientific investigation will demonstrate the possibilities of a safe antiseptic. Until that demonstration is completed a pure source of water must be obtained at any cost.

TUBERCULOSIS SANATORIUM

The building of the State Hospital for Consumptives is still on paper. The state architect is getting sketches ready to submit to the Board of Control for legislative inspection. The construction of the building will begin as soon as possible. At present there are $18,000 on hand, which is not enough to determine what sort of a building the Board of Control will select. The State Commissioners expect the legislature to appropriate a sum sufficient to erect a building to care for from 300 to 700 patients.

Dr. H. L. Taylor, chairman of the Commission, states that it will be impossible to adopt the cottage plan at present. A central building for administration purposes with wings for patients will first be erected, and cottages will be added later if the appropriation is secured. The structure will be of brick, two or three stories in height.

It is unfortunate that the building of a sanatorium for consumptives is surrounded by red-tape delays. Minnesota was long ago recognized as an exceptional sanatorium by eastern physicians, yet our legislative body hesitates to supply funds for a building for its own unfortunates. The people of the East have been alive to the needs of the tuberculous, and have provided generously for them both in lands and buildings.

If the profession of Minnesota would support Dr. Taylor loyally the funds would be secured without unnecessary delay. It seems necessary to make many appeals to the medical men of Minnesota to instruct and advise their representatives as to the needs of the sick. This sort of political wire-pulling is the duty of every physician, notwithstanding other state and national needs. If the various candidates who are rushing all over the state would refer to such measures in the campaign talk, five minutes would do more for the building of state institutions than days of committee meetings. If the voter could hear a candidate express more views on the subject of making the state's dependents comfortable, and less upon the strictly political and personal bickerings, the campaign would appeal to the thinkers and would place the campaigner on a more dignified plane.

If a portion of the state's funds that are paid out every year to gratify and satisfy some selfish interests were devoted to humanitarian purposes, Minnesota would have a sanatorium for all of the consumptives within its border. Better still: if the money that is spent to secure the nomination of a man to an exalted office could be diverted into state benefits, all of the various dependents could be housed and cared for in comfort. Grafters are not particularly interested in charities, unless they are the recipients. Grafting in Minnesota is so notorious and wide-spread that the sick and poor must wait until the greedy are filled to the gullet.

ANOTHER PIONEER GONE—DR. ARTHUR YOUNG, OF PRESCOTT, WIS.

Dr. Arthur Young was one of those pioneers who lived not only close to the heart of nature, but also to the heart of the people. He came to the wilderness to practice medicine, professionally equipped with the best education that the schools of the day could give him, for he was a graduate of both Rush and Bellevue; but he had in his sturdy Christian character an equipment that no school can give. He knew the people; he loved them, and he wrought for them as no mere man of science can. He shed lustre upon the medical profession, and we do well to join with those who knew him in paying homage to his memory.

No language can measure the amount of solace and comfort that it was his to give in an active practice of more than a half century, and his reward will be that of one ever faithful in his duty to his fellow man.

Though not personally acquainted with Dr. Young, he was known to The Lancet by his letters, which came annually, with words of good cheer and a check for his subscription, for over thirty years, he having been a subscriber since the paper was established, in 1870.

The following is a brief sketch of his life:

Dr. Arthur Young died at Prescott, Wis., Oct. 20, 1904, after an active practice of more than fifty years. Dr. Young was born in Fredonia, N. Y., May 30, 1829, and with his mother and four brothers moved to Illinois in 1837. He attended the common schools at Naperville and in Cook county, taking an academic course at Belvidere. He commenced the study of medicine with Dr. Malony, an eminent physician and surgeon at Belvidere, finishing his studies in Chicago and graduating at Rush Medical College in 1853, and at Bellevue in 1871.

In 1853 Dr. Young commenced the practice of his profession in Du Page county, Ill. In 1856 he removed to Prescott, Wis., where (with the exception of about two years when at Minneapolis and Winona) he had been in constant practice until his last illness.

Dr. Young was one of five brothers, three of whom were physicians. He was a man of strong personality, and was always active in the social and religious life of the community where he resided. He had been in failing health for several years, but was able to continue his practice until within the last few months of his death. On Sunday, the 23d inst., he was buried in the cemetery at Prescott beside his mother, a brother, and his eldest child. He leaves surviving him his widow, two sons, and a daughter; and one brother, Judge A. H. Young, Minneapolis.

BOOK NOTICES

MEDICAL DIAGNOSIS. By Wilhelm v Leube, Professor of Medicine, and Physician-in-Chief to the Julius Hospital at Wurzburg. Authorized Translation from the Sixth German Edition. Edited, with annotations, by Julius L. Salinger, M. D., late Assistant Professor of Clinical Medicine in the Jefferson Medical College, and Physician to the Philadelphia Hospital. With five colored plates and seventy-four illustrations in the text. Cloth, $5.00; half leather, $5.50. New York: D. Appleton & Co.

Almost every American medical student who within recent years has spent considerable time in the German and Austrian clinics, has brought home with him Leube's two-volume work, "Specielle Diagnose." From the constant reference made to this work in his clinics he comes to have a feeling of respect for the book and its author. Having purchased the work the doubt in his mind as to its value vanishes, and he accepts it as a valued counsellor in medical differential diagnosis.

Only those of us who have with painful slowness dug out the original German can appreciate to the fullest extent a translation in our native language. As one goes through Salinger's translation he cannot help but feel a certain disappointment in the English wording. Pains enough have not been taken to express the sense of the original. The sentences in some of the translated paragraphs are so involved that one is often in doubt as to the exact meaning of the English. While it may be a good fault in a translation to be literal, it is the literal sense, not the literal wording, which the reader desires. This the translator has in many instances failed to render.

Leube more than any other writer of differential diagnosis has adhered strictly to the subject of his work. In all his chapters, no matter which disease is under consideration, one thought seems ever uppermost in his mind,—to give the distinguishing differential points between the disease under consideration and all other conditions which simulate it. No waste of words is indulged in. Non-essentials are omitted, or dismissed with a word. Not only is he content to enumerate the list of simulating conditions, but his distinctions are sound, are born of his own wide experience, and are true to the nature of the disease discussed. They are not mere text-book differences or the "ceaseless repetitions" of other writers. From the beginning to the end of every chapter one reads nothing but differential diagnosis. In many of his chapters, and this is especially true of his chapters on nervous diseases, he goes into more detail in his anatomical, physiological, and pathological descriptions than seems necessary in a book dealing with medical diagnosis. However, such descriptions always form a basis for the consideration of some leading diagnostic symptom or sign.

The translation of this leading work in special medical diagnosis by Salinger will be eagerly read by American clinicians, even those who have been familiar enough with the German to read the original.

GEO. DOUGLAS HEAD, M. D.

NEWS ITEMS

Dr. Valdemar Pleth has located at Crookston.

The new hospital at Kelliher will be open soon.

Dr. F. O. Ilstrup, of Braham, has moved to Grasston.

Dr. B. E. Bearman, of Hensel, N. D., will move to Mentor, Minn.

Dr. William Treacy, of Lewistown, Montana, died last month at the age of 31.

Dr. R. J. Phelan, State University, 1903, has moved from Waseca to Chaska.

Dr. W. W. Allen, of Fort Pierre, S. D., died last month from blood poisoning.

Work has been begun on the grounds of the new State Sanitarium at Walker.

Dr. A. J. Stowe, of Rush City, has sold his practice to Dr. A. Stierle, of St. Paul.

Dr. J. A. Mattson, a recent graduate of the State University, has located at Carver.

Minot, N. D., business men purpose to raise funds to build a hospital for that place.

Dr. J. H. Titus, of Mora, was married last month to Miss Frankie Pond, of Minneapolis.

Cottonwood wants a hospital, and a committee of citizens is soliciting funds for this purpose.

The hospital at Madison will be enlarged if sufficient funds can be obtained by subscription.

Dr. J. H. Crowe, of Virginia, was married last month to Miss Mary B. Tucker, of Salem, Indiana.

Dr. G. E. Thomas, a recent graduate of the State University, has located at Moose Lake.

Dr. Henry S. Plummer and Miss Daisy L. Berkman, of Rochester, were married last month. Dr. Plummer is associated with the Drs. Mayo, Stinchfield, & Graham.

Dr. Arthur Young, of Prescott, Wis., died last month. Dr. Young was one of the oldest physicians in the state, and had been a subscriber to the Lancet over thirty years.

Dr. Thomas L. Devereux, Hamline, 1901, died last month. Dr. Devereux was one of three out of sixty-six who passed the government examination two years ago, and was situated in the Philippines at the time of his death.

The Chisago-Pine County Medical Society elected the following officers at its last meeting: President, Dr. C. A. Anderson, Rush City; vice-president, Dr. R. L. Weisman, Pine City; secretary, Dr. J. E. Gemmel, Rush City; treasurer, Dr. E. E. Barnum, Pine City.

The Mower County Medical Society met at Austin last month, and elected the following officers for the coming year: President, Dr. A. E. Henslin, Le Roy; vice-president, Dr. W. W. Freeman, Grand Meadows; secretary, Dr. H. F. Pierson, Austin; treasurer, Dr. J. G. Schattler, Dexter.

In the North Dakota medical examination last month six out of nineteen candidates failed to pass. The following received certificates: William H. Young, Klein; W. J. Kennedy, Marion; Cyrus Kidd Ritchie, Velva; John Leo Devine, Lansford; Zella White Stewart, Grand Forks; V. A. Young, Munich; Geo. H. Shrodes, Lidgerwood; Ella Cleverdon, Chicago, Ill.; Thomas Mulligan, Grand Forks; M. J. Keys, Balfour; A. G. Chadbourne, Wabasso, Minn.; G. V. Rukke, Aneta; Carl V. Cole, Fargo.

PHYSICIANS LICENSED AT THE OCTOBER (1904) EXAMINATION TO PRACTICE IN MINNESOTA

We publish this list in this form at the request of the State Board of Medical Examiners, in order that the names may be pasted in the Official Register, copies of which are sent free by the Board to anyone who applies for the same and remits five cents to pay the postage.

Blackmer, Frank J. (R) ; P. & S., Chicago, 1904; Oct. 14, 1904. Albert Lea, Minn.
Biedermann, Jacob (R) ; Uni. of Minn., 1904; Oct. 14, 1904....Stillwater, Minn.
Cottom, Frank W. (R); Jefferson, 1904; Oct. 14, 1904.......Dayton, Ohio
Campbell, L. Alexander (R) ; Uni. of Minn., 1904; Oct. 14, 1904....Minneapolis
Davison, Peter C. (R) ; Hamline, 1904; Oct. 14, 1904.......Clara City, Minn.
Dudley, Homer D. (R) ; Northwestern, Chicago, 1902; Oct. 14, 1904....Winona
Hamilton, Arthur S. (R) ; Uni. of Penn., 1897; Oct. 14, 1904..Independence, Ia.
Hagen, Gilbert L. (R) ; Hamline, 1904; Oct. 14, 1904.......Minneapolis, Minn.
Herm, G. G. (H) ; Hahnemann, Chicago, 1904; Oct. 14, 1904......Scarville, Ia.
Kiesling, Irving H. (H) ; Boston Uni., 1903; Oct. 14, 1904..Fergus Falls, Minn.
Lalonde, Joseph N. (R) ; Laval Uni., 1903; Oct. 14, 1904.........Torah, Minn.
Lee, Kenelm, J. (R) ; Johns Hopkins, 1904; Oct. 14, 1904.......Renville, Minn.
Lyon, John D. (R) ; Northwestern, Chicago, 1904; Oct. 14, 1904...Chester, Ia.
Maurer, Edmund L (R) ; Uni. of Minn. 1904; Oct. 14, 1904...St. Paul, Minn.
Martin, Claude D. (R) ; Keokuk, 1900; Oct. 14, 1904...........St. Paul, Minn.
Mackeen, Ida A. (H) ; Uni. of Minn., 1904; Oct. 14, 1904....Minneapolis, Minn.
Newmann, W. H. (R) ; Northwestern, Chicago, '04; Oct. 14, '04..St. Charles
Oredson, Olof A. (R) ; Hamline, 1903; Oct. 14, 1904............Duluth, Minn.
Peterson, Alfred C. (R) ; Hamline, 1904; Oct. 14, 1904.........Murdock, Minn.
Ransom, Edward M. (R) ; Uni. of Minn., 1904; Oct. 14, 1904. Minneapolis, Minn.
Seeley, Isaac F. (R) ; Keokuk, 1904; Oct. 14, 1904.............Faribault, Minn.
Stumm, T. Wesley (R) ; Rush, 1901 ; Oct. 14, 1904...........St. Paul, Minn.
Westrom, Erick A. (Ecl.) ; Col. of M. & S., Chicago, 1904; Oct. 14, 1904. Chicago
Witherstine, Wm. H. (R) ; Rush, 1904; Oct. 14, 1904.........Rochester, Minn.

NORTHWESTERN LANCET

A Semimonthly Medical Journal

VOL. XXIV NOVEMBER 15, 1904 No. 22

ON THE LIFE AND CHARACTER OF THE LATE JAMES H. DUNN, M. D.*

By William Asbury Hall, M. D.

MINNEAPOLIS

Mr. President and Members of the Hennepin County Medical Society:

It gives me great pleasure, on this special occasion, to present to this Society a portrait of our late deceased member, Dr. Dunn. It comes as a gift from Mrs. Dunn, the widow of the deceased, in response to the expressed wish of some of the members of this Society that his portrait might adorn the walls of our library. I feel sure that I voice the sentiment of every member when I say that we shall prize it greatly, and, while his memory will ever remain green in our hearts, still, every time we look upon this speaking likeness, we shall be freshly reminded of how much he adorned the meetings of our Society during his lifetime.

James Henry Dunn, student, scholar, physician, and gentleman, was born on May 29, 1853, and died on June 16, 1904, sincerely mourned by all classes of people with whom he had ever come in contact.

To-night, in accordance with the expressed wish of this Society, I am expected to bring to your notice some of the salient features of his life and character. I would that a more eloquent member had been chosen for the purpose, but I accepted the appointment for the reason that by so doing I could add my personal tribute to the memory of one who had been my steadfast friend during the whole of the seventeen years of my residence in this city. He was my friend when I was a stranger and needed friends; he was my friend at the time I was being made to feel the "cold shoulder" of those who seemed to resent my coming as an invasion of their "squatters' rights."

Dr. Dunn was born at Fort Wayne, Indiana, of Irish parents. In 1855 his parents moved to the Territory of Minnesota, and located near the present city of Winona. When six years of age his father died, and he was given a home by a farmer in Winona county where he remained until he was fifteen years old. During this time he attended the common country schools. From this time on he supported himself by various kinds of manual labor. He entered the high school, and remained two years, then entered the Winona State Normal School, where he remained until he graduated in 1873. Previous to graduating, and during his vacations, he taught in summer schools, and after graduating he took a prominent part in the work of the Minnesota State Teachers' Institute for several years. He commenced the study of medicine in the office of Dr. J. B. McGaughey, of Winona, in 1875, and received his degree of doctor of medicine from the University of the City of New York in 1878. After graduating in medicine he continued teaching, and held the position as Professor of Natural Sciences in the Mankato State Normal School for two years. In 1880 he decided to abandon teaching as a profession, and went to Shakopee, Minnesota, where he soon won a large general practice. In 1883 he had saved sufficient means so that he was enabled to go to Europe for a post-graduate course. This was spent largely at Vienna and Heidelberg, and lasted for two years. Upon his return he came to Minneapolis, where he remained until the time of his death. He was Professor of Genito-Urinary Diseases in the Minnesota Hospital Medical College from 1885 to 1889. After the college was made the Medical Department of the University of Minnesota he continued to hold the chair of Genito-Urinary Diseases until 1901, when he was made Professor of Surgery, which position he held at the time of his death. He was elected President of the Minnesota State Medical Association in 1888, and was Vice-President of the American Medical Association in 1902..

---

*Memorial Address, read before the Hennepin County Medical Society, November 7, 1904.

Dr. Dunn's whole career illustrates what may be accomplished by steadfastness of purpose and strict integrity. Adverse circumstances made his younger life a very hard and laborious one. Never strong and robust, yet a most indomitable energy made him always alert and industrious. I have heard him say that he never knew what it was like to feel really well for a whole day at a time, and yet for years he never spared himself. Occasionally he would take a short vacation, only to return to his work with redoubled energy. He died as he had lived—"in the harness." As a student he was a hard worker. He had a mind that enabled him to grasp and hold facts, and draw logical conclusions regarding them. These facts and conclusions were stored away in his brain, and, like the negatives of the photographer, could be extracted at will. His industry as a student could have but one result, and that was to make him a ripe scholar, acknowledged as such by all who knew him. As a writer he was clear and forceful, and his use of the English language commanded strict attention whenever he rose in debate. His contributions to medical literature are many and valuable. In his profession his chief excellence was as a surgeon. A good diagnostician and a good operator, and that with his conscientious regard for his patients' welfare, made him always a safe man. His patients trusted him, and the medical profession trusted him as a wise consultant. What greater praise can be given a medical man in his professional capacity than this?

But notwithstanding all his achievements as a student, scholar, and physician, it was as a man and a gentleman that Dr. Dunn endeared himself to his friends and the community in which he lived. He was always kind and considerate of others and their rights. He was free from petty jealousy. and always seemed to take a pride in the success of others, when that success was fairly won. Modest himself, he had no use for braggadocio and self-aggrandizement in others. A close observer of the various phases of human character, he was quick to recognize merit or sham. To those to whom he gave his friendship he was always loyal. For the undeserving he held no resentment, but rather a feeling of pity for their short-comings. I consider his integrity the strongest element in his character. That, with his strict sense of justice, his kindly and gracious manner, and his open-hearted generosity, brought him a multitude of friends. He never knew how many friends he possessed, for, having once won a friendship, he never lost it. His relations with his professional brethren were ideal. He was a kind husband and father, and a devout churchman. He was fond of the beautiful in literature and art. He had traveled extensively, and his field of vision was broad.

I feel how very inadequate my few words are in expressing the characteristics that so greatly endeared him to the members of this Society. You all remember how every face would light up with pleasure whenever he came into our meetings, for everyone had grown to expect to hear something from him that would both instruct and entertain. I feel that it would be presumptuous in me to attempt a lengthy eulogy in your presence, and therefore I will conclude my heartfelt tribute to his memory by saying that the world needs more men of his type, and the medical profession needs them more. He was emphatically a gentleman of the old school, and his memory will rest like a benediction upon this Society.

James Henry Dunn is dead! He died in the fulness of his powers and in the height of a successful career. Although a comparatively young man in years, yet, judged by the higher standard of the real purposes of life, he was ripe, beyond comparison, for the sickle of the Great Reaper; for—

"We live in deeds, not years; in thoughts, not breaths;
In feelings, not in figures on a dial.
We should count time by heart-throbs. He most lives
Who thinks most, feels the noblest, acts the best.
Life's but a means unto an end; that end—
Beginning, mean, and end to all—God."

SOME OBSERVATIONS ON MOVABLE KIDNEYS*

By A. W. Abbott, M. D.

Clinical Professor of Diseases of Women, University of Minnesota

MINNEAPOLIS

With the older writers the movable kidney was one which had descended from a normal position and possessed any range of mobility, while the floating kidney was described as a congenitally loose kidney with a true mesonephron. Later authorities make the distinction one of extent of mobility only, it being demonstrated that the congenitally misplaced kidneys are usually fixed and that the mesonephron, so called, is simply a hernial pouch of the peritoneum no matter what the range of motion, and that a true mesonephron, as an analogue of the mesentery, does not exist. We may therefore speak of a kidney as movable when its range of motion is greater than one-half inch, which is probably the limit of normal kidney motion.

Movable, wandering, floating and migratory kidneys and nephroptosis may for all practical purposes be considered synonymous terms.

Mesué, in 1561, described the condition. Three hundred years later so little additional knowledge had been added that I was able to find in Holmes' Surgery of 1871 (a great authority in those days) the following:

"Tumors which enjoy a wide range of motion are met with now and then in the abdomen and are believed to be in many cases floating kidneys, but many of these tumors have a range of motion far beyond what the kidney can possibly obtain.

"In such case I once heard of from a friend when a lump in the belly could be moved from a little below the liver in a curved direction down into the iliac fossa, and thence over towards the middle line, always maintaining the same limits, the loose body must have been either a foreign substance in the intestines, which was unlikely in that case from the direction and range of its motion, or more probably one of those concretions in the peritoneal sac so well described by Dr. J. W. Ogle and others."

To-day the identical language would suggest a freely movable kidney, and nothing else. He adds:

"The point is not of much practical importance, since in hardly any circumstances would the idea of cutting down on such a substance be entertained."

This was written only thirty-three years ago.

The frequency with which this abnormality will be found will depend, as in other conditions, much upon the skill of the observer. In 1876 Oppolzer found the condition in 1 to 250 patients. Quoting him, Ebstein says: "His figures must be received, as he himself admits, *cum grano salis*."

It was soon found that women were affected very much oftener than men. Then it was said that four per cent of women had nephroptosis. Later, as the condition was called to the attention of medical men, twenty-five per cent of women patients were found to have one or both kidneys movable.

For several years I have made it a routine practice to examine the mobility of the kidneys in all women patients, and, while my records are not as complete as they should be, I do not hesitate to say that sixty-five per cent of all of my women patients have one or both kidneys movable, to the extent of one inch below the normal, and that while the difficulty of making a satisfactory examination in stout women is great, an abnormal mobility of the kidney can be demonstrated in these in a number far greater than is generally conceded. It should be noted that the women examined by me are those who seek relief from pelvic or abdominal troubles only. An examination of women suffering from diseases outside of these special ones might give a lower percentage.

The figures given for children (five per cent) are probably too low.

If systematic examinations were made of all patients coming to our dispensaries, and a proper record kept, it would prove to be of the greatest value in settling these points. Age, sex, whether stout or thin, and the extent of movement of each kidney, would afford sufficient data.

Etiology.—The organs of the body are held in permanent position by fibrous tissue in the form of fascia. This applies particularly to the abdominal organs, abdominal walls, and outlets. The muscular action in this regard is temporary, and not to be compared in effectiveness with the fascial. Fat has no supporting power, but rather the reverse. The blood vessels have no permanent supporting power, but accommodate themselves by growth to the new positions, which the organs they supply occupy. The peritoneum has some holding power, but when unsupported gradually gives way as so often seen in hernia. The posterior abdominal wall from its structure is rigid and unable to give way.

---

*Read by invitation before the Minneapolis Medical Club, Sept. 21, 1904.

The fascia renalis surrounds the kidney vessels, and is incorporated into the kidney pelvis and connective tissue about the kidney. It has a firm attachment to the fascia of the psoas and quadratus lumborum. The paravertebral niches, or hollows, from the way in which they receive the kidneys, contribute to their support. In front the right kidney has only movable coverings in the liver, colon, and duodenum, while the left kidney is snugly encased between the stomach and spleen, while the middle portion is overlapped by the tail of the pancreas. The anterior abdominal wall, composed of strong muscles and stronger fascia, under normal conditions is making a constant pressure backwards, but with the intervention of the softer contents of the abdominal cavity. We may therefore discard the fat and blood vessels, and while we cannot entirely disregard the peritoneum, we must look to the posture of the kidneys, the renal fascia, and the compression by the abdominal walls as the essential supporting factors. On the other hand, whatever tends to weaken these tends also to allow of the descent of the kidneys. The posterior abdominal wall cannot give way. We know nothing of conditions which should weaken the renal fascia, and hence can reasonably look only to a deterioration of the strength of the anterior abdominal wall as the chief factor in kidney ptosis.

We can therefore readily understand why movable kidney is more common in women, whose abdomens have been distended and weakened by pregnancies, ovarian tumors, ascites, etc., or weakened by the artificial support of the corset, or by any debilitating disease or manner of life.

I look with suspicion on falls and direct blows as a cause of nephroptosis, because a force sufficient to misplace the kidney would be certain to produce other more serious injuries. As long as the abdominal pressure is adequate the kidneys lie in their natural hollows, and only a slight demand is made on the renal fascia. When, however, the support of the anterior abdominal wall is weakened, as above mentioned, there results a slow giving away of the renal fascia, the renal vessels lengthen, the peritoneum stretches, and the mobility of the kidney will increase *pari passu*. The general ptosis of the other abdominal organs so often seen in connection with movable kidneys, tends to substantiate this proposition. We must admit that the above does not explain the cases of movable kidney seen in healthy children and strong adult men. It is possible that we do not appreciate some anatomical defect, and very certain that there are pathological causes of which we are entirely ignorant.

PATHOLOGY.—Gastric pain, intestinal indigestion, and nervous disturbances are said to be caused by movable kidneys, but eighty per cent of cases at least have none of these symptoms, and the few that have have also a marked ptosis of the other abdominal organs, which certainly offers a more plausible explanation of these symptoms. We may therefore look with suspicion upon the relation of the above conditions and movable kidney.

Kidney stone and pyelitis are no more common than in the normally situated kidneys.

Hematuria in a movable kidney should suggest a careful examination for tubercle or stone, rather than to assume that it is caused by the mobility. Twisting or bending of the ureters by the traction of a descended kidney may, we must admit, produce a transitory hydronephrosis, and if inflammatory thickening at the bend takes place a permanent hydronephrosis may result.

I have never seen an atrophed kidney that was movable.

There is one very unusual condition to which I invite your particular attention. I have seen no mention of it in the literature, but we have had four cases in my hospital. I allude to a loss of function without any noticeable anatomical change; that is to say, if the urine of the two kidneys, in such a case, be separated, a few drops perhaps will flow from the side of the movable kidney while the usual amount will be obtained from the other. In two of our cases absolutely no urine was obtained from the side of the movable kidney for an hour. I have never seen this condition in a normally situated kidney, except in the presence of cancer, tuberculosis, or ureter obstruction. It is possible that the suspension of function may at times exist with normally situated kidneys. I have never found it. A systematic examination of a series of normally situated kidneys could alone settle the question. I am entirely unable to offer an explanation of this phenomenon. In one case we separated the urine on three different occasions, and never got a drop from the very movable right kidney, and during this time the urine passed averaged about fourteen ounces every twenty-four hours, and yet the kidney resumed its function completely after fixation, the urine being normal in quality and amount, as shown by the segregator. It was probably not due to bending of the ureter, because the dammed up urine would have distended the kidney and caused pain. The late Dr. Dunn examined this case very carefully with me, and could find no swelling, tenderness, or other indication that there was any obstruction. A microscopic examination of a piece of the kidney removed at the time the fixation was made showed nothing abnormal. It would appear that we must look to an interference with the blood or nerve supply for an explanation.

SYMPTOMS.—From what has been said before it will be inferred that not much importance can be attached to hematuria, or gastric, intestinal, and nervous symptoms as depending upon ptosis of the kidney. It must not be forgotten that eighty per cent at least of patients with movable kidney have no symptoms referable to the displacement. There are symptoms, however, which occur in a minority of patients, and are directly connected with the kidney and its dislocation. These are pain in the loins radiating towards the bladder, pain in the kidney itself with tenderness on pressure, distension from ureter obstruction, and suspension of function, if we admit the value of this latter symptom.

DIAGNOSIS.—As the vast majority of patients with movable kidney present no symptoms, the only way to arrive at a knowledge of its existence is to make a routine practice of examining all patients. As to the method of examination: the sitting, standing, and lateral-prone positions have their advantages. I prefer, as a rule, to have the patient sit on the edge of a table, the feet resting on a support high enough to bring the thigh horizontal, the body supported by the arms, with the hands resting upon the knees and the body also bent forward slightly towards the side which is being examined. In one or two instances I have found, for reasons that I cannot understand, that the mobility is best made out in the lateral-prone position, i. e., where the patient lies on the side opposite to that being examined, the knees being well drawn up. If we neglect any portion of the side under examination, from just below the liver to the pelvis, we may miss the kidney, as it may be found anywhere within this region.

A small ovarian cyst, or elongated gall-bladder, or a long process of the right lobe of the liver, does not slide into the normal position of the kidney. Indeed, to the practiced hand the *glide* of a movable kidney is almost unmistakable.

To determine the functional activity of a single kidney one must use the segregator or the ureteral catheter. The former is easier for the patient, as well as the examiner, and gives better results. When, however, the bladder is distorted by tumors or drawn backward by a high attachment to a retrodisplaced uterus, or if there is extensive ulceration of the bladder, the ureteral catheter may be preferable. The good results to be obtained by the segregator are sometimes complicated by the appearance of albumen in the urine under its use, when not present immediately before, and when the microscope shows that there has been no traumatic bleeding. This I cannot explain. Dr. Harris of Chicago, who devised the segregator, told me that he had never seen this, but I have found it on three or four occasions, and once my assistant made the same observation independently. This would not be of much importance as far as determining the functional activity, because the albumen is found in the urine from both branches of the segregator when both kidneys are acting, but it would naturally influence our judgment as to the advisability of an anesthetic for nephrorrhaphy, if we did not know that this peculiar condition was sometimes present. When this condition is found we may depend with entire safety on the absence of albumen in the urine just before segregation. As the great majority of cases of movable kidney apparently possess no symptoms, and the probability of resulting harm is so remote, the only treatment required is an encouraging assurance of the patient. In other words the movability, *per se,* does not need treatment. This statement will have to be modified if it is found at some future time that the mobility in itself tends to bring on pathological changes in the kidney which cannot as well be rectified when such changes come about.

Movable kidneys, producing symptoms, should be fastened up in an easy position. The use of padded bandages is useless. This can easily be demonstrated by noting the pressure required to hold a kidney in place by the hands when the patient is in the upright position and makes even a slight muscular effort.

There are several good methods for fastening the kidney. They need not be described here. However, two points should always be borne in mind: first, to leave the kidney in an easy position where force is not required to hold it; and, second, to make the principal point of retentive hold at the lower pole of the kidney.

The question may be asked, Why interfere with a kidney if it has lost its function, and the other kidney is doing the work? The kidneys are often suddenly called upon for a large amount of extra work. Notwithstanding that one kidney, after a nephrectomy, will do the work of both it would seem that, when all of the natural kidney secreting surface can be made available, this should be done.

I would suggest that in making a nephrorrhaphy for loss of function in a movable kidney that a ureteral catheter be introduced beforehand, as it makes an excellent guide in case a flexion of the ureter has become permanent from inflammation, besides proving the patulousness of the ureter when normally open.

RELATION OF FEEDING TO INFANT MORTALITY*

By S. G. Eghian, M. D.

AMERICAN FORK, UTAH

One of the most important problems of pediatrics, which in spite of all efforts and researches still remains unsolved, is infant feeding. About twenty-five years ago it was believed that the constituents of different milks were the same, but existed in different proportions. The problem of infant feeding then was regarded easy to handle. But all the efforts to render cow's milk, the substitute milk generally used for artificial feeding, equivalent to human milk, by reducing its amount of albumen, increasing its sugar, etc., to the same proportion as in the human milk, have been proven useless; the result has not been better. Physiological researches explained the difficulty; the constituents of human milk differed not only in proportions, but also in physiological qualities. If we consider the different rates of growth, the different stages of development at birth, the different dominant tissues in the organism, the different digestive system of an infant and a calf, we must without hesitation admit that the food designed for the infancy of these two different animals should be physiologically different.

A calf as soon as born can stand and run, and in a short time has no need of the food which is furnished from its own mother; while an infant is born helpless, and needs care and maternal food for a long time. The stomach of a cow comprises 70 per cent of the whole digestive tract, while the human stomach comprises only 20 per cent of the same. (H. D. Chapin.) The infant stomach does not form a depot. It is adapted to receive only a small quantity; the food therefore should be of easy digestion, and leave the stomach in a short time. The capacity of the stomach of an infant the first month is 90 gms. (3 ounces), and enlarges only three-quarters or half of an ounce every month until one year of age. If we take the capacity of an infant stomach in weight, it is 1-60 of the weight of the entire body at birth, 1-40 at the end of the first month, 1-33 at the end of a year, 1-23 in an adult (Biedert).

---

*Read before the Utah State Medical Association, Ogden, Utah, May 10 and 11, 1904.

In the process of digestion and assimilation the cells of the digestive system are active automatically, their secretion and functions are adapted to the food which nature from generation to generation has consigned to them. The cells of a calf's digestive tract should be endowed also with different functions, and should be constructed differently from those of an infant's to assist the digestion of the food of their own race. As statistical tables illustrate, an infant deprived of its natural food is unfavorably situated to maintain its existence, on account of lack of proper food, the food that should correspond to its digestive power and to the need of its constitution.

Statistics of 1830 to 1850 represent an average 188.3 per thousand infant mortality, among infants under one year of age. Statistics of the years from 1870 to 1890, in spite of all the progress in dietetic hygiene, show an increase, 194.4 per thousand (Bertillon). Eroess's statistics of the years 1886 to 1890, made in twelve different countries, among infants under one year of age, present 188.8 per thousand mortality. There were 7,708,000 deaths to 40,833,000 births. If statistics of Russia be added to this the average rises to 214.7 per thousand. Children under fifteen years of age make up one-third, children under five, one-ninth of all the population; so the above mortality comprises one-fourth of entire mortality. In England in the first month of life the infant mortality is 570 per thousand, deaths resulting from congenital diseases, malformation, weakness, injuries during the labor, etc., included. In the second and third month, etc., it decreases gradually to 218, 157, 131, 126, 120, 115, 110, 105, 100, 95, and 90 per thousand at the twelfth month. In New York, according to the statistics, quoted by L. Fisher, in the three years, 1890 to 1892, there were 162,721 births. During that time the number of deaths of children under five years of age was 52,213, making the death rate over 320 per thousand. According to Holt in three years, 1890-92 inclusive, the total mortality was 128,136, distributed among the different ages as follows:

Under one year	32,916—26	per cent.
1—2 years	10,547— 8	per cent.
2—5 years	9,794— 7	per cent.
5—15 years	69,409—54	per cent.

According to Quetelet, quoted by J. L. Smith, there die during the first month after birth four times as many children as during the second month after birth, and almost as many children as during the entire two years after the first year, although even then the mortality is high. Tables of mortality prove, in fact, that one-tenth of the children born die before the first month has been completed.

Infant mortality increases with the increase of the births (Biedert). In Copenhagen in 1880, in families with 1—4 children the mortality was 226 per thousand; with 5—8 children, 302 per thousand; with 9—12 children, 495 per thousand. Schweig gives the following report in this respect from the province of Baden: if the births were 21 per thousand of the entire population, the deaths of infants, under one year of age, were 21 per thousand of the entire mortality; if the former was increased to 25, 36, 53 per thousand, the mortality increased to 22, 27, 36 per thousand of the whole.

Illegitimate infants in all countries present the highest mortality, on account of lack of maternal food and care. Bertillion says: "It is a crime. One has no courage to kill the infant, but one lets it die gradually by starvation and neglect." Statistics of the years 1881-85 and 1890-95, collected in five different European countries, presented a mortality of 310 per thousand, against a mortality of 185 per thousand among legitimate infants of the same age. Majer gives from 600 to 750 per thousand mortality among the illegitimate infants of some Bavarian districts.

Nearly the same condition prevails among infants whose mothers are obliged to work out of their houses. Villerme pointed out, that during the years 1823-24 half of the children of merchants, manufacturers, and engineers reached the age of twenty-nine years, while half of the children of women working in textile industries and living in the same districts, died before having reached their second year. Nearly the same condition prevails in all European manufacturing districts.

Among infants of the poor classes the mortality is likewise higher. In Berlin, Germany, among the children of the rich classes, under five years old, the mortality is 57 per thousand; that among the poor classes is 357 per thousand, about seven times as much. Clay has pointed out that in Preston at the end of the first year, of 100 infants of gentry, born alive, 90 were living; that of merchants 79, and of the laboring classes only 69. Wolf gives the following statistics from Erfurt. Out of a thousand infants born alive the mortality may be tabulated as follows:

Age.	Illegitimate	Laboring class	Middle class	High class
Under one year.......	352	305	175	89
1—2 years	55	115	55	19
3—5 years ...	42	136	65	26

He further pointed out that, where one infant of the rich classes dies from gastro-intestinal diseases, from the middle and laboring classes 2—2½ die; from illegitimate infants, 7½. As an interesting fact in this regard it may be mentioned that in Erfurt, Germany, during the year 1851, in which the prices of victuals were low, infant mortality was 194 per thousand, while in the year 1855, when the prices of victuals were very high, the mortality increased to 249 per thousand. In Finland during the bad crop years of 1867 and 1868, the infant mortality was 220—390 per thousand, while the average mortality in the years 1865-66 and 1869-77 was 165 per thousand. (Biedert.) In all the large cities of the world, such as Rotterdam, Prague, St. Petersburg, New York, Berlin, Budapest, Breslau, Copenhagen, Chicago, etc., infant mortality is highest among the poor classes.

Among the inhabitants of the overcrowded districts of the large cities infant mortality is again highest. In Leipzig in the localities where there is one room to each infant, the mortality is 101.1 per thousand; in the localities where there is one room to 2—2½ infants, the mortality is 330.6 per thousand; it is 416.9 per thousand where there are three children to one room. In Vienna the lowest infant mortality, 141—232 per thousand, is in the districts where there is one room to 0.83-1.32 persons, while the mortality increases to 406—429 per thousand in the districts where there are 1.94—2.10 persons to one room. In this matter, according to Biedert, the chief acting factor is rather poverty than the unhygienic circumstances of the place, since among the relatively well-off laboring classes, who live in unhygienic places, such as cellars, etc., infant mortality is lower than among the poorer classes who are living in relatively more healthy places.

During the year the maximum infant mortality is in the hot summer months. This is, however, caused mostly by spoiled and contaminated food, since food spoils easily in hot temperature. (Biedert.) In Prague, Austria, where every woman nurses her own infants, the hot summer season does not show any increase in infant mortality. In Berlin during the hot summer months infant mortality is twenty-one times greater among infants artificially fed than among breast-fed infants; the average through the whole year is only eleven times greater, and it reaches its climax in July, when the mortality of the artificially-fed infants is twenty-five times higher. According to Biedert's statistics from Hagenau, Germany, in the years 1885-90, 64 died of gastro-intestinal diseases in May, 89 in June, 129 in July, 182 in August, 251 in September, 182 in October. The average death in every month is 52. In France, of 12,000 deaths among infants under one year of age, 5,660 (about 50 per cent), happen in the four summer months, beginning with July. In Berlin, in the districts where the poor classes live, the summer months show five times greater mortality among infants under one year of age than in the other districts.

Deaths by gastro-intestinal disturbances, called by laymen, cramps, teething, convulsions, weakness, etc., according to Biedert, comprise the 100—530 per thousand of the infant mortality. A reliable report from Wolf shows 600 per thousand of infant mortality in Erfurt. C. Meyer gives the following statistics from the district of Allerhausen, where the diagnoses were made by the physician. Seven hundred and ten out of 1,000 infant deaths were from gastro-intestinal diseases, 50—280 out of 1,000 deaths from diseases of respiratory organs, 70—240 out of 1,000 deaths from infectious diseases. He further points out that in Bavaria, the higher infant mortality is, the higher is the percentage of deaths from gastro-intestinal disturbances.

In all countries the mortality among the artificially-fed infants is high. Bertillon reports from Loire Inferieur, 900 per thousand mortality among artificially-fed infants under one year of age. In whole districts, out of 100 deaths in infancy, as examination showed, only eleven were breast-fed during life. Of 1,943 fatal cases from digestive disturbances, collected by Holt, only 3 per cent had the breast exclusively. He says: "In my own experience, fatal cases of diarrheal diseases in nursing infants are extremely rare." Smith quotes the following: "On the continent, in Lyons and Parthenay, where foundlings are wet-nursed almost from the time that they are received, the deaths are 337—350 per thousand. On the other hand, in Paris, Rheims and Aix, where foundlings are all artificially fed, at the date of the statistics, their deaths were 502, 639—800 per thousand. He further states that, "In New York foundlings, numbering several hundred a year, were formerly artificially fed, and, incredible as it may appear, their mortality with this mode of alimentation reached nearly 100 per cent. Now wet-nurses are employed for a portion of the foundlings, with a much more favorable result." Holt says: "In my own experience it is extremely rare to find a healthy child who has been artificially fed from the birth, who has been reared in a tenement house." He further says: "The largest number of deaths in the first year are due to diseases of the gastro-intestinal tract and marasmus." In Berlin the deaths among artificially fed infants in the years 1891-92 averaged 9.4 times more, and in the first seven months 11.4 times more than the deaths among the breast-fed infants.

We see from the above statistical facts that the greater the difficulty to procure a suitable food for the infants, deprived of their natural food, the higher the mortality rate. The circumstances not under the control of the mother, such as poverty, unhygienic buildings, inability to procure high-grade milk, and to follow directions in preparing and preserving it on account of the number of the children in the family, or occupation out of the house; and again, the ignorance and negligence on the part of the mother or nurse combine to produce the "race suicide" of our civilization. It sounds incredible that a healthy born infant should die from lack of proper food. The old master, Hippocrates, said: "Food is not food, if it does not nourish." The food for the use of infants should repair the waste, supply material to build up new tissue, and furnish force and heat for the functions of the organism.

At the present time the general substitute food for human milk is cow's milk; it can be procured everywhere and is within the reach of all. There has not been produced, however, yet, a standard modification of cow's milk which would correspond to the need of the infantile organism, and be adapted to the power of its digestive system. As I mentioned in the beginning briefly, human milk and cow's milk,—judging from pure reasoning and also scientific facts,—should be differently compounded bodies, to correspond to the different rates of growth, to different capacity of the digestive systems, and to different proportions of the animal tissues in the organism of their offsprings.

In the first place the ingredients of cow's milk, the albuminoids, the fat, the sugar, etc., represent different proportions from those of the human milk; of albuminoids cow's milk contains 3.55 per cent, the human milk 1.50 per cent,—about three times more; of fat both milks contain about equal parts,—cow's milk 3.69 per cent, and the human milk 3.30 per cent. The human milk contains about twice as much sugar (6.8 per cent) as the cow's milk, which contains 4.8 per cent; of inorganic salts cow's milk contains 0.70 per cent, the human milk 0.20 per cent,—about three times more.

By these chemical facts, however, the question of how to modify the cow's milk for the use of infant feeding is not wholly finished. The most important matter, the utilization of its ingredients in the economy of the infantile organism, remains yet for the researches of the future. Chapin says: "It is useless to attack the problem of artificial infant feeding from the standpoint of chemistry alone, although a knowledge of food chemistry is of great importance. What is needed is a knowledge of substances that have proven to be able to support life and produce healthy tissue; how to combine and adapt them to suit the needs and the digestive system of the infant."

One of the most important ingredients of the milk which is utilized in the organism of the infant to repair the waste and supply materials to build up new tissues, is the albumen. The fat and the sugar are partially used, if necessity arises in the household of the organism, as substitutes for the albumen, but they are mostly used as force and heat producers. Biedert sees the most important differences in both milks in the albumen. He says: "I observed closely ten years the breast-fed infants and also the infants who were fed with cow's milk or with other infant foods, and I always noticed a great difference in the condition of health and growth, and in their stools. One must keep always in mind that from the unyielding cow's milk *casein* should be given as much as it can be borne by the infants." In the following I wish to point out some of the important facts in regard to the difference of albumen in both these milks.

As we know from physiology, the albumen transforms into *peptone,* a soluble composition, by the action of the stomach juice. Milk curds in the stomach before it can be changed into peptone by the presence of a *lab-ferment,* parachymosin. The lab-ferment of human stomachs, parachymosin, is a far more susceptible body than the chymosin of calf's stomach; the former loses its curd-forming power by adding alkalis, or by heating, to a greater extent than does the calf's chymosin.

By adding a small quantity of fresh human stomach juice to human milk there form curds, and by adding to this, sufficient stomach juice, to equal in quantity the milk, the curds formed will be dissolved completely. In contradistinction to this, the curdling formed by the addition of fresh human stomach juice to cow's milk remains the same, no matter how much of stomach juice is added. According to Bruecke, different kinds of albuminoids demand various amounts of pepsin; albuminoids of human milk require relatively the less quantity. Among the different albuminoids, fibrin, legumin, etc., the caseins are easiest to digest. The fat, which is suspended in the milk as microscopic drops, is embedded in the meshes of the curds, and makes them very loose and flocculent. Human milk containing relatively small amounts of albumen and large quantities of fat divides its curds in the finest flakes. The attempts, however, to render the curd of cow's milk as fine as that of the human milk, by diluting to 2:1, 1:1, 1:2 with water, or adding different agents, such as soda chloride, soda carbonate, or coagulating the milk first and shaking it to fine particles, etc., have been proven useless. (Vogel, Kuttner.)

One of the chief characteristics of the cow's milk casein is that it curds in the acids, while the human milk casein remains unchanged. According to Biedert's experiments, in alcohol and in tannic acid both caseins were equal in chemical changes. In the following agents, 0.4 per cent or concentrated hydrochloric, nitric, sulphuric, and phosphoric acids, 20 times diluted or concentrated lactic, acetic, tartaric acids, in calcium chlorate, magnesium sulphate, lead acetate, bichloride of mercury, is human milk never or with great difficulty curdled. On the contrary in these reagents the curds of human milk dissolve; with these reagents the cow's milk casein curdles and remains so.

Beside the consistency, both caseins differ in their colors and reactions. Human casein is light yellow when it is wet, brown when it is dry, the cow's milk casein is white when it is wet, light yellow when it is dry. When they are wet the reaction of the human casein is alkaline, that of the cow's milk casein is acid. Only 1-20 part of the dried and powdered cow's casein is soluble in pure water, while with human casein the great part could be dissolved. During the extraction of fat in ether, the human casein swells and turns jelly like, and makes its separation impossible, while the cow's milk casein remains unchanged.

According to Reichmann's and Escherich's observation no albumen of the human milk passes the infant stomach without being digested. Van Putrin proved that the digestion in the stomach of breast-fed infants takes place relatively in short time. Nearly always the stomachs of breast-fed infants were entirely empty in 2-2 1-3 hours after the feeding, while those of the cow's milk-fed infants were found empty in 2-3 hours or longer. Biedert proved that the stomachs of the breast-fed infants were always empty in 2 1-3 hours after the feeding, and according to forty-six examinations of three cow's milk-fed infants—1½, 5, and 6 months of age,—made in 2¼, 2½. 2¾, and 3 hours intervals after the feeding, it was found that the stomach was entirely empty, in three hours, two times; thirty-two times there were yet undigested curds in different quantities, two times there was yet a great amount of the curds. According to C. Bernard, the rest of the albumen, which passes the stomach undigested, is digested in the lower part of the intestines, by the action of the pancreatic juice. The action of the pancreatic juice, however, is impaired in the acid reaction of the contents. The breast-fed infants are protected against this by the complete digestion of the albumen in their stomach. When the infant grows older the quantity of the pancreatic juice becomes larger and it meets the undigested albumen in the lower part of the intestines, where the reaction becomes more alkaline. But in the lower part of the intestines there is great danger that the undigested albumen will fall a prey to the decomposing micro-organism.

Escherich found the micro-organisms in the contents of the intestines of new-born infants, 3-7 hours after the first respiration; they are carried by the air first to the mouth and from there to the digestive canal. After the first feeding which drives out the congenital contents of the intestines the predominant micro-organisms are bacterium lactis aërogenis in the upper part, and bacterium coli communis in the lower part of the digestive tract. Bacterium lactis transforms the milk-sugar into lactic acid, carbon dioxide, and hydrogen. Bacterium coli, which can exist in every reaction, acid or alkaline, produces chiefly butyric acid from the neutral fats. (Biedert.)

By sterilizing foods the existence of the micro-organisms is not checked. Eberle found 32,000,000 micro-organisms in one milligram, about one-sixtieth of a grain, content of the intestines, in spite of sterilized food. Langermann found in one cubic centimeter, about half a cubic inch, content of the stomach of a normal digesting cow's milk-fed infant from 3,700 to 240,000, in that of breast-fed infants, from 6,900 to 29,000, and in that of a sick infant millions and millions of micro-organisms. In the presence of free hydrochloric acid, which has a germicidal property, still from 3,200 to 6,400 micro-organisms were found in the same amount of stomach content.

It is demonstrated that in cow's milk-fed infants there is always more or less putrid decomposition of the albumen in the intestines; even in well digesting and healthy cow's milk-fed infants the existence of putrid decomposition can be proven by the presence of *indican* in the urine. This is the reason why the stools of cow's milk-fed infants as a rule smell like rotten cheese. A. F. Marfan gives the origin of putrid decomposition "incomplete utilization of cow's milk casein." According to the examinations made of ten breast-fed, and seventeen cow's milk-fed infants, the stools of the cow's milk-fed infants contain three times more N than those of breast-fed infants. If the amount of N which would originate from the gastro-intestinal secretions, be abstracted, still two-thirds of the N would originate from unutilized casein of cow's milk. Breast-fed infants are well protected against putrid decomposition by existence of the acids (hydrochloric, lactic, and butyric acids) and by complete digestion and assimilation of the albumen. The contents of the gastro-intestinal canal of breast-fed infants to the end of, and even after digestion, have acid reaction. According to Wegscheider there is no remainder of casein in the stools of breast-fed infants.

Gentlemen, as we see from the above stated facts, from the standpoint of chemistry and physiology, the difficulty in artificial feeding, and the main cause of the gastro-intestinal disturbances of cow's milk-fed infants originate from the unyielding albumen of cow's milk. The future of the infant feeding depends to a great extent upon the adaptation, and utilization of foreign albumen in the digestive system of infant.

But this, unfortunately, is not the only difficulty to be overcome to produce a proper infant food. One of the other greatest difficulties is to produce and to supply wholesome cow's milk for the use of a large mass at a price that will put it within the reach of all. Bacteriological and chemical examination of milk, which is furnished as infant food, gives us an idea as to its unfitness for feeding. Prof. H. W. Conn of Wesleyan University, states as follows, "The milk that is supplied to our cities frequently contains more bacteria than are present in city sewage, and in the case of unusually bad samples of milk the number of bacteria outnumbers that which is found in the worst sewage." If we consider only that one gram, fifteen grains, fresh soil contains 100,000,000 bacteria, and one gram cow's manure as many as 375,000,000 bacteria, and on a little scab of cow's udder and hairs exist several hundred of bacteria, and also if we consider that one single bacterium, in a temperature of body heat, in six hours increases to 3,880 bacteria, we shall realize how easily a milk supply may be contaminated, and how difficult is its handling. On the other hand the milk at home, after being delivered, is subject to farther contamination at the hands of ignorant and negligent mothers or nurses, by the bottle, nipples, spoons, strainer, etc. The bacteria not only by decomposition destroy the albuminoids of the milk, but also produce toxic elements, which act very injuriously on the general constitution and especially on the mucous membrane of the gastro-intestinal tract.

THE HOSPITAL BULLETIN

A HOSPITAL'S WORK FOR ONE MONTH

During the month of October, 102 new patients entered St. Barnabas Hospital. Of these 21 were medical cases, 1 was obstetrical, and the remaining 80 were surgical. Among the medical cases were two typhoids, a mother and son, both of whom entered on the first day of the month. The disease in the mother ran a severe course, the temperature rising to 106°, and persisting for five weeks, when it returned to normal. After a remission of two days a fresh crop of rose-spots appeared, and the temperature slowly rose again. The other typhoid ran a perfectly typical course.

One case of interest because of the difficulty in making a diagnosis, was that of a young man who, after an indefinite period of general malaise, accompanied by chilly sensations, entered the hospital with a temperature of about 100°, a tentative diagnosis of typhoid having been made. The fever persisted for four days, at the end of which time, he was discharged having had no further symptoms, except that of a slightly enlarged spleen. It has been suggested that this case might belong to the very interesting paratyphoid group, but unfortunately no blood cultures were made.

A case which has excited some comment is that of a young woman who has been to all appearances asleep for the past four weeks. She was apparently in excellent health when she fell into a sleep from which she could not be aroused, and in which she has since remained. Her temperature ranges between 99° and 101°. She has a red-blood count of 3,000,000, a large leucocytosis, and a low percentage of hemoglobin. This anemia, together with a slight bronzing of the face, has led to the suspicion of Addison's Disease. The diagnosis of acute mania has been made.

Of other medical cases there were pneumonia, 2; pleurisy, 2; chronic Bright's, 2; acute Bright's, 1; acute appendicitis, 3; eczema, 1; pulmonary tuberculosis, 1; rheumatism, 1; dilatation of the heart, nephritis, and general dropsy, 1; gonorrhea, 1 (see LANCET of Nov. 1); tertiary syphilis, 1; and another case of dementia.

Of the surgical cases, appendicitis heads the list. There were 9 operations for uncomplicated appendicitis, in two of which the appendicitis was associated with a salpingitis, two in which it was found advisable to suspend the displaced uterus, and one, a case of a young girl who had not yet menstruated, in which a good-sized dermoid of the right ovary was found at operation. There was also one case of appendiceal abscess.

Tuberculosis follows appendicitis in point of frequency, there having been 4 tuberculous knees and three tuberculous hips operated upon; one case of tuberculous peritonitis, and one of pleurisy, in all probability tuberculous, in which a large quantity of serous fluid was drawn off from the pleural cavity. There was also one case of tuberculous glands of the neck—a case of recurrence after a previous operation. Other operations were amputation of breast, 2; gall-stones, 1; hysterectomies, 2; uterine fibroids, 2; parovarian cyst, 1; pelvic abscess, 1; uterine polyp, 1; dilatation and curettement, 6; perineorrhaphy, 2; sarcoma of testicle, 1; exstrophy of bladder (see LANCET of Nov. 1) inguinal hernia, 2; varicocele, 1; hydrocele, 1; epidydimitis, 1; hemorrhoids, 1; fecal fistula, 1. There were 3 cases of osteomyelitis, 1 dislocation of the shoulder, and 1 fracture of the clavicle. There were 2 gun-shot wounds, both in the lower thigh, and 6 railroad injuries, ranging in importance from a crushed finger to a broken leg, but none of any particular interest. There was one carcinoma of the lip, three eye cases, three adenoids 1 tonsil and 2 mastoids.

MABEL S. UHLRICH, M. D.

CONDITIONS SIMULATING AND MISTAKEN FOR ACUTE APPENDICITIS

H. Roth gives the histories of nine cases in which inflammation of the appendicular region was simulated by various other conditions. The list includes cholecystitis, intermittent hydronephrosis, intussuception, two cases of inflammatory disease of the uterine adnexa, ovarian cyst with twisted pedicle causing general peritonitis, a prevesical and a properitoneal abscess, and pneumonia.—Medical Record.

NORTHWESTERN LANCET

A SEMIMONTHLY MEDICAL JOURNAL

The Official Organ of the Hennepin County Medical Society

W. A. JONES, M. D. .... EDITOR

Editorial Office, 515 Pillsbury Building

W. L. KLEIN, PUBLISHER

SUBSCRIPTION, $2.00 A YEAR.

839-840 Lumber Exchange .... Minneapolis

NOVEMER 15, 1904

TECHNICAL ASSAULT

A verdict of $14,322.50 was awarded last month to Miss Anna Mohr against Dr. Cornelius Williams, of St. Paul, by a jury in the district court. The case was tried in June on the ground of malpractice and negligence with damages laid at $20,000, but before the case was finished the plaintiff's attorneys asked to amend their complaint. When the case was finally tried in October all charges of negligence, mistake and malpractice were abandoned and "technical assault" or the performance of an unauthorized operation, was the only complaint alleged.

This case is supposed to be the only one of its kind on record, although the question has been considered by other courts in somewhat similar cases. No ruling has ever been made to settle the question of the surgeon's authority to operate after the discovery of a dangerous condition discovered under anesthesia. In this case the patient was examined by Dr. Williams in his office before the operation. The patient complained of the right ear and said the left ear was all right. Upon examination Dr. Williams discovered a diseased condition of the left ear, but could not make an extended examination at that time. The right ear showed a perforation of the drum, a discharge, and a small polyp. It was agreed that Dr. Williams should operate upon this ear. When the patient was anesthetized a careful examination of the left ear was made, and a more serious perforation of the drum, with a necrosis of the bony wall of the middle ear, was discovered by Dr. Williams and Dr. Herbert Davis. Dr. Williams contended, very properly, that the disease of the left ear demanded immediate operation to protect the patient from the dangers of infection and brain abscess.

The operation was performed successfully, and the right ear was left for later operation. The patient was disappointed in the outcome, and very soon instituted her suit. She contended that Dr. Williams was employed to operate on her right ear; the surgeon contended that the patient in presenting herself for operation gave an implied consent to whatever was necessary. Under the existing circumstances the patient could not be allowed to recover from the anesthetic to give her consent to an operation she had not planned for, neither could any one assume the responsibility and consent in the name of the patient.

It is generally understood that when a patient presents herself for operation the surgeon is expected to assume responsibility, and to use his best judgment as to the character of the operation. If this were not done in many capital operations, a large number of patients would be in an unfortunate position, subject to added danger and perhaps permitted to die without relief unless the surgeon were authorized to do what is best for the patient after the anesthetic was administered. Dr. Williams did what any good surgeon would do under like circumstances, and he should be upheld by the courts, as well as by his brother practitioners.

The plaintiff's expert was a Dr. Thompson, an alleged aurist, who for years has openly advertised in an obnoxious manner. Dr. Williams was right in his efforts, and was upheld by the best surgeons in St. Paul. The jury, however, were given to understand that an insurance company was behind the case, and that the burden of the verdict would come out of the company. This may have influenced them largely in their rapid verdict.

This excessive amount, beyond all reason and out of all proportion, will doubtless be set aside, and a new trial granted. It is to be hoped that Dr. Williams will fight the case, and that the question of implied consent will do away with all questions of technical assault.

This case emphasizes the necessity of physicians and surgeons securing the best possible protection from unscrupulous patients and scheming attorneys. It also suggests the advisability of a thorough understanding and a written consent between patient and surgeon. Physicians are easily imposed upon, and readily and fearlessly undertake to relieve any sufferer regardless of consequences to themselves.

DR. THOMAS L. LALIBERTE

Dr. Laliberte, a prominent physician and resident of East Minneapolis, died at his residence on University Avenue N. E., Saturday, Nov. 5, 1904.

Dr. Laliberte was born in Quebec in 1851, and graduated from the medical department of Laval University, and is said to have had the largest practice of any one in the city. At least he did a tremendous amount of work, and was always ready to respond to any call regardless of circumstances. He was a very popular man and physician, and was evidently beloved by a large following, if the crowds which attended the services at the church and followed the remains to the grave are an evidence of his popularity and successes.

Dr. Laliberte was a conscientious worker, modest and retiring in demeanor, and a favorite with the profession. He was the organizer and promoter of Hennepin Court, Catholic Order of Foresters. His death occurred after an illness of five months, and was due to a complication of diseases.

CHRISTIAN SCIENCE, AGAIN

It may seem to our readers to be almost useless to say another word about Christian Science, but as one who stands very high in the Christian Science Church has recently spoken in Minneapolis and given to the press an extended abstract of his lecture, we have something specific and authoritative to deal with.

Judge Hanna was for nearly ten years reader in the so-called "Mother Church," and editor of the official periodicals, and what he says of the claims of the church may be accepted. The creed of the church consists of six brief articles, which are copyrighted by the Rev. Mary Baker G. Eddy, and therefore may not be copied without authority. THE LANCET does not deem them of sufficient interest to ask for permission to print them. We may say, however, in passing, that so far as we can understand them they would be accepted by any orthodox Christian. But the Christian Scientist's view of healing the sick is another matter. Stress is laid upon the commandment to the twelve as recorded in Matt. x, and it is maintained that the command to heal is as imperative as the command to preach—that Christ's gospel is a healing and saving gospel. Says Judge Hanna:

"No right exists for the effort to put aside Jesus' commandment to heal the sick and to heal according to his teachings and his methods of healing, without drugs, surgery, or any material remedies or appliances."

This specific and sweeping utterance deprives the Christian Science healer of the physician's anesthetic, antiseptic, antitoxin, and every form of drug, and of quarantine methods; it deprives the surgeon of his knife, his splint, and his bandage; and it deprives even the dentist of his forceps.

What evidence does Christian Science offer that its methods of healing has no use for drugs, surgery, or material appliance? Simply this: its healers have restored, by their so-called divine methods, a lot of people in a class well defined in the mind of any man with sufficient knowledge of scientific methods to differentiate one class from another; and people of this class have been healed in quite as large numbers by all the charlatans in medicine, such as the bone-setters, the osteopaths, the vendors of patent medicine, and even by the so-called "divine healers" who anoint with oil, a mode of treatment that has more warrant of Scripture than the absent treatment of Christian Science.

On the other hand, we venture to say that surgery is saving thousands of lives every week in the year, not a single one of which could be saved by Christian Science. Quarantine measures, antiseptics, and anesthetics are also adding multitudes to this army of saved, all of whom would perish under Christian Science treatment.

Until Christian Science successfully enters the domain of surgery and produces one well authenticated case of healing which imperatively demands the splint or the knife, honesty requires that no such claim as Judge Hanna here makes be put forth; and until Christian Science cures cases that are not cured every day by physicians without drugs, and by all sorts of quacks, with and without drugs, the healing part of the Christion Science gospel has no foundation in fact.

BOOK NOTICES

TEXT-BOOK OF DISEASES OF THE EYE. For students and practitioners of medicine. By Howard F. Hansell, A. M., M. D., Clinical Professor of Ophthalmology, Jefferson Medical College; Professor of Diseases of the Eye, Philadelphia Polyclinic; Ophthalmologist, Philadelphia Hospital; etc., and William M. Sweet, M. D., Demonstrator of Ophthalmology, Jefferson Medical College; Assistant Ophthalmic Surgeon Jefferson Medical College Hospital; Assistant Ophthalmologist, Philadelphia Hospital; etc., with chapters by Christian R. Holmes, M. D., Casey A. Wood, M. D., D. C. L., Wendell Reber, M. D. Blakiston's Son & Co., Philadelphia, Pa.

The especial point to be commended in this work is the excellent and original illustrations. There are few old illustrations such as we find too commonly in most of the text-books, and the drawings here shown illustrate perfectly what is intended to be described in the text. For instance, on pages 112 and 113 are two illustrations of Panas operation for ptosis. The illustrations are so definite that any one should be able to do the operation without any further description, whereas the description of this same operation appearing in other text-books is so incorrect that the operator would be more apt to be misled. Dr. Allport first called attention to this fact, and the writers of this book evidently agree with him. The paper used is of good quality and the print is large.

There is an excellent chapter on "Diseases of the Lachrymal Apparatus; Diseases of the Orbit; and Diseases of the Cavities Accessory to the Orbit," by Christian R. Holmes who has gained renown for his work along these lines. There is also an excellent chapter on "Ocular Symptoms in General Diseases, Ocular Headaches," by Casey A. Wood, and one upon "The Pupil in Health and Disease," by Wendell Reber, which should be appreciated by the general practitioner.

The work, being written for the general practitioner and student, has wisely wasted very little space on refraction; to do justice to this subject a volume in itself is required.

The reviewer believes that some of the smaller works which are written particularly for the student are more applicable for his use. The general practitioner will find it of great value in aiding him in the making of diagnoses and should possess it for that reason though he may thirst for more detailed and thorough knowledge regarding the treatment. Teachers in Ophthalmology who use the Opaque Projector, will find here some exceedingly valuable material for illustration, which is not duplicated.

THE SUPPRESSION OF TUBERCULOSIS. By Professor E. von Behring. Price, $1.00. New York: John Wiley & Sons.

Professor von Behring, of the University of Marburg, whose name and work is very widely known, especially in connection with diphtheria and the manufacture of antitoxin, has written a small book embodying the results of many years of laboratory work and study upon immunity, and the life-history of the tubercle bacillus. He has been conducting some very interesting experiments upon animals with regard to tuberculosis.

He approaches the subject of tuberculosis and the manner of infection, in both man and animals, from an entirely new standpoint. He does not believe that consumption is contagious in the manner now generally accepted. He believes that the infection comes in the system very early in life. His methods and theory of immunizing the source of supply, the cow, and in this way protecting the infant, is new and startling. He has taken a much-used subject and made a very interesting and readable book. It is so full of statements that differ from the former teachings that one is presented with a great many questions for his own solution.

A peculiar fact about the book is that while of interest to those who like to think in the medical profession it is of equal value to veterinarians and progressive owners of large herds of cattle.

THE SURGICAL TREATMENT OF BRIGHT'S DISEASE. By George M. Edebohls, A. M., M. D., LL. D., Professor of Diseases of Women in the New York Post-Graduate Medical School and Hospital, etc. New York: Frank F. Lisiecki.

When a new subject of so vital interest to mankind and so full of promise as this one, is taken up, the profession has a right to demand the most exact information, and scientific handling of facts. It is so easy to generalize from a few facts, and to draw rosy conclusions; but such writing is very dangerous, and it is not Professor Edebohls' way of doing things. He began to favor operation in chronic Bright's disease a little over five years ago, and as he was the pioneer in this work, the profession will accept the results of his study with the utmost confidence.

His analysis of the seventy-two cases treated by him prior to 1904, is a model of scientific writing. Every important detail of the history of each case is given, and his analysis of results attained is so complete that the reader feels that the conclusions he draws may be wholly depended upon. His conclusion is that surgery is the only hope of sufferers from a hitherto incurable malady. Such books as this make for progress.

A PRACTICAL TREATISE ON DISEASES OF THE SKIN. FOR THE USE OF STUDENTS. By James Nevins Hyde, A. M., M. D., Professor of Skin, Genito-Urinary and Venereal Diseases, Rush Medical College, Chicago, etc.; and Frank Hugh Montgomery, M. D., Associate Professor in Dr. Hyde's Department in Rush, etc. Philadelphia and New York: Lea Brothers & Co.

The thorough revision of such a work as Dr. Hyde's, with the addition of much new material which modern research has put at the disposal of the editors, is a welcome announcement to the profession even though it means the necessary purchase of another book. In the first place, the book has been revived in fact, and new plates and new matter show that there has come to us a book of far greater value than the former edition; which was a standard work in its department. Our profession can well afford to put aside old editions when new books of this kind render the old obsolete, but too many new editions have no reason for existence.

DISEASES OF THE NOSE, THROAT AND EAR, AND THEIR ACCESSORY CAVITIES. By Seth Scott Bishop, M. D., D. C. L., LL. D., Author of "The Ear and its Diseases;" Honorary President of the Faculty and Professor of Diseases of the Nose, Throat, and Ear in the Illinois Medical College; Professor in the Chicago Post-graduate Medical School and Hospital; Surgeon to the Post-graduate Hospital and to the Illinois Hospital; Consulting Surgeon to the Mary Thompson Hospital, to the Illinois Masonic Orphans' Home, and to the Silver Cross Hospital of Joliet, etc. Third Edition. Thoroughly Revised, Rearranged, and Enlarged. Illustrated with 94 Colored Lithographs and 230 Additional Illustrations. 564 Pages, Royal Octavo. Price, Extra Cloth, $4.00. F. A. Davis Company, Philadelphia.

This work, which now appears in a third edition, is so much improved that it is worthy of high commendation.

Dr. Bishop is a lucid writer, and what he lacks in originality he makes up in clearness of statement and grasp of his subject.

We cannot fail to notice a little tendency to padding, but this is not always a fault if the commonplace matter thus added is such as some practitioners need ever to have before them, and, no doubt, Dr. Bishop thus considers the matter. The general practitioner will find much in this book that he needs almost daily, and perhaps put in better shape for him than in books not written in the main for specialists.

REPORTS OF SOCIETIES

MINNESOTA ACADEMY OF MEDICINE

A. W. DUNNING, M. D., SECRETARY

The regular meeting of the Academy was held in the parlor of the Commercial Club, St. Paul, Wednesday evening, November 2d. The president, Dr. M. P. Vander Horck, was in the chair. There were 27 members present.

The President's Address was upon "The Injection Treatment of Syphilis."

Dr. A. W. Abbott read a paper, "Acute Fluid Dilatation of the Stomach."

Dr. A. McLaren, in commenting on the subject, said that it is a rare condition, and that he had found no satisfactory explanation of it. Some time ago he had seen a small boy with

Dr. Greene, of this city, in whom there had been an empyema. After the resection of two ribs for drainage, the boy began to vomit, and seemed very sick. On examination of the abdomen a large tumor was found which extended way down to the pubes. A stomach tube was passed, and a very large quantity of fluid was drawn off, and the stomach washed at short intervals, but the boy died within a short time. He further called attention to the fact that this condition followed upon a chest, not an abdominal, operation.

Dr. W. A. Jones enquired whether there is not a relationship between this state and that of paralysis of the sympathetic nervous system, when it is not due to mechanical obstruction.

Dr. McLaren replied that in his case there was no mechanical obstruction. At about the time of his observation Dr. Fenger, of Chicago, had reported some five or six cases of a similar character, but had advanced no satisfactory theory or explanation.

Dr. Abbott, in closing, stated that he was still of the opinion that the method of treatment by lavage, followed by Dr. McLaren in his case, is the better course. Most of the reported cases that have recovered have been treated in that way rather than by operation, as in his case. Gastro-enterostomy should be the last resort, as it is almost impossible to do it without flooding the abdominal cavity with the stomach contents.

He spoke of the appearance of the abdomen as a diagnostic feature. There was in his case a distinct depression in the right side and a corresponding tumor in the left of the abdomen, due to the over-distended stomach.

Dr. James S. Gilfillan and Dr. Louis Nelson were selected from among the waiting list of candidates to fill vacancies existing in the St. Paul side of the membership.

NEWS ITEMS

Dr. A. Charpentier has located at Round Lake.

Dr. W. W. Allen, of Ft. Pierre, S. D., died last month.

Dr. H. E. MacLaughlin has located at Hankinson, N. D.

Drs. Lockwood & Shaleen, of Hallock, have opened a hospital.

The new hospital building at White Earth will be completed this month.

Dr. C. F. Andrews, of Woonsocket, S. D., has moved to Birchwood, Wis.

Dr. Isabella C. Herb, of Rochester, has gone to Europe for special study.

Dr. W. W. Brown, of Cleveland, has sold his practice to Dr. R. E. Cavanaugh.

Dr. Carl McErb, a recent graduate of Michigan, has located in Sioux Falls, S. D.

Dr. J. A. Freeborn, of Fergus Falls, has been doing post-graduate work in Chicago.

Dr. E. J. Davis, of Mankato, has begun work as physician at the Soldiers' Home at Minnehaha.

Dr. Joseph L. Lalonde, brother of Dr. Edmond Lalonde, of Torah, will locate at Cold Spring.

Dr. E. J. Davis, of Mankato, succeeds Dr. Norred as physician at the Soldiers' Home at Minnehaha.

Dr. W. M. Newman, of Spokane, Wash., was married last month to Miss Nellie Levens, of Albert Lea.

Dr. P. H. Sunde, who has been practicing at Osnabrock for a few months, has located at Pine River, Minn.

Dr. C. L. Francis, who has practiced at or near Mapleton for about fifty years, has retired from practice.

The statement in our last issue that Dr. Gryttenholm would return to Zumbrota for practice, was erroneous.

Dr. Marion A. Mead, Minneapolis, has moved her office from the Pillsbury Building to 1502 Third Ave. So.

Dr. Zella White Stewart, a graduate of Cornell University Medical College, has begun practice in Grand Forks, N. D.

Dr. D. A. Nicholson has resigned his position with the State Hospital at St. Peter, and will go to the Pacific Coast.

Crookston will have a new $12,000 hospital next year, over half of the cost having already been raised by subscription.

The osteopaths of South Dakota have organized, and will make an "aggressive campaign in the interests of the science."

Dr. H. S. Schanche, of Christiana, Norway, has located in Portland, N. D., and formed a partnership with Dr. K. A. Wadel.

The Tourtelotte hospital building at Mankato has been sold to the German Lutheran church, and will be fitted up for a new hospital.

Dr. G. P. Crume, who has been instructor in genito-urinary and skin diseases in Hamline for some years, has been made professor in the same work.

Dr. B. E. Bearman, of North Dakota, who had decided to locate at Mentor, Minn., has changed his mind, and gone West. The field at Mentor is open.

Dr. F. G. Benn, a 1903 Hamline graduate, who is practising at Kuhn, N. D., was married last month to Miss Elizabeth H. Kane, of Long Prairie, Minn.

Dr. A. W. Anoka has just celebrated the 50th anniversary of his arrival at Anoka. In the early days he was the only physician north of St. Anthony Falls.

Dr. A. J. Stowe, who recently gave up practice at Rush City, is doing post-graduate work in Chicago, and it is reported that he will locate in Minneapolis.

Dr. Thomas L. Laliberte, of Minneapolis, died on the 6th inst. Dr. Laliberte was a graduate of Lavalle University, Canada, and came to Minneapolis in 1881.

Dr. Stella L. Wilkinson, who graduated at the State University last year, has located at Duluth, with offices at 318 Central Ave. She spent a year as interne in a San Francisco hospital.

Dr. F. E. Tracy, of Helena, Montana, died last month. Dr. Tracy had many friends in Minneapolis, and while visiting here only a few weeks ago he caught the cold that led to his death.

The local paper of Des Lacs, N. D., says there is a good opening for a physician and a drug store at that place. The nearest physician is ten miles away, while it is eighteen miles to one in the opposite direction.

Dr. Harlow C. McLeod, of Hudson, Wis., has purchased the fine residence occupied for the last two years by the "bone-setter," and will establish a hospital. Dr. McLeod is a graduate of Columbia, Class of '98.

The new building for St. John's Hospital at Fargo was formally opened last month. It contains seventy-five beds, two operating rooms, and all the conveniences of a first-class hospital. The building cost over $70,000.

The City Hospital at Stillwater is to have two new wards. One is for patients in a highly nervous condition, who would otherwise be carted off, as is the custom, to the insane asylum; the other is for tubercular patients.

The Mower County Medical Society met at Austin last month, and elected officers as follows: President, Dr. A. E. Henstin, Le Roy; vice-president, W. W. Freeman, Grand Meadow; secretary, Dr. H. F. Pierson, Austin; treasurer, Dr. G. J. Schottler, Dexter.

The Park Region District and County Medical Society held its annual meeting at Fergus Falls, Oct. 20. The following officers were elected for the ensuing year: President, Dr. O. T. Sherping, of Fergus Falls; vice-president, Dr. C. W. Meckstroth, of Brandon; secretary and treasurer, Dr. O. M. Haughan, Fergus Falls.

The Red River Valley Medical Society, at its annual session last month, passed a uniform fee system, with a penalty of expulsion from the society for its violation. The following were elected officers: President, Dr. C. H. Danniston, Crookston; vice-president, Dr. M. McKinnon, Fosston; secretary, Dr. Theo. Bratrud, Warren.

A verdict has been given against a St. Paul specialist for $14,322.50. The decision of the jury was based upon a perfectly proper, skillful, successful attempt to save the patient's life by an operation found to be necessary only after the patient was put under the anesthetic. The guilt of the surgeon was that he did not have the patient's consent in writing, duly witnessed, and sealed, for that particular operation.

POST-GRADUATE WORK

DOCTOR: If you want practical post-graduate work during fine season in the delightful city, write for particulars. NEW ORLEANS POLYCLINIC, P. O. Box 797, New Orleans.

FOR RENT

Centrally located office rooms suitable for a dentist or a nose and throat specialist. Inquire No. 2 Syndicate Block, Minneapolis.

NORTHWESTERN LANCET
A Semimonthly Medical Journal
VOL. XXIV DECEMBER 1, 1904 No. 23

SURGICAL DISEASES OF THE SIGMOID*

BY H. D. NILES, M. D.
SALT LAKE, UTAH

During the past year I have operated upon two cases of acute obstruction of the bowels due to volvulus of the sigmoid, and have attended two other patients suffering from incomplete stricture of the bowels, resulting, I believe, either from a twist or from some inflammatory lesion of the sigmoid. In the two former cases the diagnoses were verified upon the operating table; in the two latter cases no operation was done and consequently the diagnoses were not positively confirmed.

My interest in these cases stimulated me to review the available literature upon the subject rather carefully, and to refresh my knowledge of the surgical anatomy of the sigmoid by further study and dissections. The conclusions suggested by these investigations I have ventured to hope you might regard worthy of your consideration and discussion.

In the past our surgical endeavors in this region have been almost entirely confined to operations for advanced malignant disease or to the relief of complete obstruction due to volvulus. To limit our efforts to such emergencies, I am led to believe, means to exclude from rational treatment many surgical conditions to which the anatomic structure and relations of the sigmoid render it especially susceptible.

Those who recall that the sigmoid has the greatest mobility and the smallest diameter of any part of the colon, and that the large intestine changes at this point from a comparatively straight, to an irregularly tortuous, canal will easily understand how a sagging, descending colon over-laden with fecal matter, might readily displace or distort the narrower, more movable, and tortuous sigmoid in a way to produce a partial or complete occlusion of the canal. Even without any twist or distortion of the sigmoid, an excessive accumulation of fecal matter in the descending colon might produce ulceration, either from over distention with interference of the blood supply and resulting gangrene, or from mechanical irritation alone. Or an ulcer from pressure might occur from angulation. Ulcers from these or other local or constitutional causes may here, as in other parts of the intestinal canal, result in perforation or cicatrical stricture.

Those who have kept in touch with the growth of our knowledge of surgical pathology in and about the pylorus, appendix, gallbladder, and uterine appendages, will appreciate these peculiar conditions that favor the development of inflammatory or obstructive lesions of the sigmoid, and will readily see how these conditions might often be the causative factors of dangerous and distressing pathologic changes that one could not reasonably expect to correct by any non-surgical treatment.

It is highly probable that with our vague knowledge of sigmoid disease and our uncertain means of diagnosis, the majority of cases are unrecognized, and the symptoms attributed to some obscure rectal or intestinal trouble. Reviewing my own experiences and observations I am led to believe that unless some especially urgent or significant symptoms, like acute obstruction or a tumor, be observed the true conditions are rarely suspected or treated.

---

*Delivered at the Utah State Medical Association, Ogden, Utah, May 10 and 11, 1904.

In the absence or scarcity of operating-room observations and post-mortem reports, our mental pictures of morbid processes in this region must necessarily be based largely upon our general knowledge of such processes in other parts of the body, modified by the physiologic and anatomic peculiarities of this portion of the large intestine. The practical surgeon will not go far amiss, however, if he divide diseases of the sigmoid first into two classes: One, non-surgical, to include all morbid processes involving the mucosa only; and another, surgical, to include, first, all ulcerations starting in the mucosa and later involving the peritoneal coat; second, all mechanical displacements or distortions with complete or incomplete stricture with or without localized pressure necrosis; third, any malignant disease or benign growth; fourth, any constricting bands or disease extending from nearby structures; fifth, the various consequences that might grow out of any of the above conditions, as peritonitis, perforation, acute obstruction, systemic infection, hemorrhage into the bowels, or peritoneal cavity, angulation from cicatrization of an ulcer, etc.

With some such classification of the possible conditions in mind a review of the history and a study of the obstructive and inflammatory symptoms in a given case ought to give one a fair idea of the pathology and the indications for treatment.

It may not be necessary or possible to always determine before operation whether inflammatory or obstructive symptoms here are due to a half twist or a complete turn of the sigmoid, or whether they may not be due to some other distortion or angulation of the parts with inflammatory lesions as a cause or a result; but it is most important that we bear in mind the grave lesions to which the sigmoid is especially susceptible, and for which the promptest operative interference is often indicated. To assume the possible existence of such surgical lesions and to differentiate between them and an uncomplicated acute or chronic sigmoiditis due to fecal impaction or other removable causes, becomes the first duty of any surgeon when confronted by a patient suffering from symptoms, however light, that point to disease of the sigmoid.

Uncomplicated sigmoiditis like cecitis is a non-surgical affection of very common occurrence, often producing no noticeable symptoms, and usually yielding to timely measures addressed to the removal of the cause; but just as a virulent appendicitis may have its origin in an apparently harmless cecitis, so a mild sigmoiditis may be forerunner of a series of pathologic changes of the gravest surgical importance. As in appendicitis, one may not always be able to foretell the exact conditions the operation may reveal, so one may not in each case be able to determine in advance the precise sequelæ of sigmoiditis; but in the left-sided pathology, as well as in the right-sided pathology, the dividing line between the non-surgical and the surgical conditions must be clearly defined if we are to present to our patients the benefits of a rational treatment.

There are no data for accurately estimating the relative frequency of the occurrence of surgical disease about the sigmoid. It is said of vovulus that two-thirds of all cases are in the sigmoid. There are no statistics indicating how often obstruction from other lesions occurs at this point further than the well known fact that the sigmoid is one of the commonest situations of intestinal cancer, and that it is one of the preferred sites of intestinal ulceration. All varieties of ulcer, including simple perforating, tubercular, dysenteric, stercoral, and even typhoid, have been found here, and it is fair to conclude that these ulcers are preceded and followed by nearly or quite the same processes as in other parts of the intestine, and demand much the same kind of treatment, namely, rest for ulcers and early excision for cancer. Of late, many writers have dwelt upon the frequency of sigmoiditis, its varieties, causes, and treatment, but none to my mind have thus far sufficiently emphasized the causative relation that undoubtedly exists between sigmoiditis and certain terminal conditions which are revealed in late operations or upon the post-mortem table, such as perforating ulcers and malignancy with their grave consequences. Yet, if we are to be governed by our experiences and study of disease in other parts of the intestinal canal we surely cannot escape the conviction that very often, these are but a series of morbid changes, or successive steps, in a pathologic process that begins as a simple sigmoiditis to be relieved by the simplest measures, and ending, if unchecked, in morbid conditions nearly or quite beyond the most formidable surgical procedure.

For here, as in other parts of the alimentary canal and the body generally, the usual antecedent pathology of malignant disease is ulceration or some inflammatory lesion, and one of the chief causes of ulceration is some circulatory disturbance or distortion of the parts. The generally accepted belief that every distortion or twist of the sigmoid must produce unmistakable symptoms of acute and complete obstruction of the bowels was not verified in my cases, since in Case 1 the attending physician was able to inject several quarts of water for three days after the first symptoms of obstruction, and in Case 2 the alarming obstructive symptoms were on several occasions completely relieved by high injections. In Case 3 (not operated upon) there were no reasons for believing the occlusion of the bowel was at any time complete. In Case 4 (not operated upon) the marked symptoms of obstruction continued for three days, and were then relieved by rectal injections. Further experience will doubtless prove the fallacy of many of our present views of disease of the sigmoid, and furnish us in time with as clear a conception of pathology here as we have already acquired in other parts of the abdomen.

Pathology here passes from the medical to the surgical field, first, whenever any ulceration or necrotic process starting in the mucosa extends to or includes the peritoneum; 2d, whenever there is any evidence of stricture at this point regardless of the cause; 3d, whenever there exists a localized peritonitis that does not readily yield to simple measures directed to the suspected cause.

In making these statements I do not wish to be understood as recommending immediate operation in all cases where the above conditions prevail, but the decision as to when to and when not to interfere can I am sure be best made by those who view these conditions from a surgical standpoint. When in doubt and with our present means of diagnosis, it will be the case not infrequently that an exploratory incision here is certainly justifiable and quite as harmless as it is in suspected disease of the appendix, the uterine appendages, the gall-bladder, or the stomach.

CONCLUSIONS

The various pathologic changes to which the physiologic functions and anatomic structure and relations of the sigmoid render it especially susceptible, may be regarded as successive stages or steps of one morbid process, rather than as so many different diseases.

An impartial study of the various successive pathologic changes that precede, accompany, and follow inflammatory obstructions and malignant diseases of the sigmoid, furnishes convincing evidence of how little we can reasonably expect of medical treatment and how much we must rely upon timely operative interference to correct disease in this region.

Advanced malignant disease of the sigmoid is always preceded by pathologic processes which we should strive to recognize early and correct by timely operative procedures.

Acute obstruction due to volvulus, unless relieved promptly by inflation of the rectum with water or gas, is always an indication for operative interference.

All torsions of the bowel with partial or complete stricture usually demand operative interference.

All inflammatory or necrotic processes that include the peritoneal coat of the gut, with or without angulation or stricture of the bowel, should be regarded as surgical conditions.

The known frequency of cancer and all forms of intestinal ulcerations in this region, the occasional occurrence of volvulus, a practical consideration of the anatomic structure and relations of the sigmoid, combined with the lessons gleaned from a limited number of clinical experiences and post-mortem examinations,—all tend to confirm the belief that inflammatory lesions and obstructive distortions of the sigmoid are by no means rare; and that their rational treatment should be based upon the surgical conception of the conditions.

CASE I.

Mrs. M——, aged thirty-six, referred by Dr. Smedley, from whom I obtained the following history: During the past two years patient had suffered from at least seven attacks of acute obstruction of the bowels. These were attended by obstinate and continuous vomiting, cramping pains in the stomach, great and general distention of the abdomen, tenderness, with a slight rise in the temperature and pulse, and great prostration. Cathartics apparently had no effect unless perhaps to increase the distress. The vomiting was a glairy mucus, and never had a fecal odor. In each instance relief came only after persistent use of high injections for several days. These attacks were becoming more frequent, and the symptoms, always alarming, were increasing in severity and obstinacy when the patient was sent to the hospital, November 21, 1903. She was at that time just recovering from the severest attack she had ever had, and during which she and her friends, as well as Dr. Smedley, had nearly given up all hopes. When I examined her these symptoms had all subsided for the time, and she had had several watery stools, the vomiting had ceased, the abdomen was flat and soft, and there was some tenderness in both iliac regions. Rectal and vaginal examinations were negative. To my colleagues and myself the cause of these obstructive symptoms was obscure, but we all shared the opinion of Dr. Smedley that the conditions justified an exploratory incision. This operation failed to reveal to us the true cause of the obstruction. One week later symptoms of acute obstruction appeared, and, as in her previous attacks, became more alarming each day. High rectal injections proved ineffectual, and on the fourth day the abdomen was reopened, a twist in the sigmoid discovered, with ulceration at the point of angulation. An inflammatory mass about the size of a hickory nut indicated the situation of the ulceration and led to the discovery of the twist. Realizing that we had friable necrotic tissues to deal with, the parts were protected, and the greatest gentleness observed in our manipulations. In spite of these precautions the parts were scarcely touched before perforation occurred. The gut was brought to the incision, the diseased parts exised, and the ends united with a double row of silk sutures, after which the pelvic colon was replaced in its normal position, the peritoneal cavity thoroughly cleansed, and the abdominal incision closed. Two days later the patient died of general peritonitis.

CASE 2.

Mr. B——, aged forty-one, first seen in February, 1904. Gave history of having been taken suddenly ill a week before, when he suffered from terrific pains in abdomen just in left, lower quadrant, afterwards generally diffused throughout the abdomen, incessant vomiting, first of food, then of mucus, and for the past thirty-six hours of fecal matter. His medical attendant had administered calomel, castor oil, croton oil, and other cathartics, and had repeatedly given high enemas of soap suds and turpentine, all without effect. When I saw the patient, February 4, 3 p. m., the vomiting was copious, frequent, and stercoraceous, the pulse was rapid, irregular, and very weak. The abdomen was slightly distended, the greatest distention corresponding to the contour of the colon. The tenderness was quite marked in the iliac region. I operated upon him at the Holy Cross Hospital at 5 p. m. the same day, revealing almost exactly the same conditions as were found in Case 1. In this case I clamped the bowel above and below the ulceration in anticipation of a rupture of the necrotic intestinal wall. This rupture occurred with the first attempt to overcome the twist and kink in the gut, but, fortunately, without any fecal matter escaping. In this case we decided, and I think wisely, to limit our efforts to the establishing of an artificial anus, leaving the intestinal suturing to a future operation. As it was, the patient was pulseless when taken off the table, and none of us thought he would live through the night. However, he surprised us, for he rallied nicely, the vomiting ceased, and his bowels moved freely through the artificial anus, as well as the rectum. His convalescence has been uninterrupted, and very soon we hope to close the artificial anus, and restore the pelvic colon as near as possible to its normal position.

CASE 3.

Mrs. D——, aged forty-five, was first seen and examined at my office April 4, 1903. She has been more or less of an invalid for eight years. She described her illness as dating from an attack of peritonitis, first localized and limited to the left side, and afterwards general. From that time to the present, as I interpret her description of her distresses, she has suffered from local and general symptoms apparently due to incomplete stricture of the large intestine. During these years she has never had a passage of the bowels except after the use of a cathartic supplemented by one or more rectal injections aided by light massage of the lower abdomen. An evacuation is always accompanied by pain, producing faintness, and frequently she has lost consciousness from the severity of her sufferings. Her stools are at all times thin and frothy, containing large quantities of mucus and some blood. For many years she has had a pain in the abdomen just inside the left hip. At times when the movements are especially scanty and unsatisfactory she becomes distended, suffers from great abdominal distress, and symptoms of systemic infection, headache, nausea and vomiting. Malnutrition and long suffering have made terrific inroads in her general health, and she looks, as she says she feels, a physical wreck. Examinations of rectum, vagina, stomach, heart, and kidneys are negative. There is some tenderness in left iliac region, and considerable left-sided rigidity. Taking into account the history, the left-sided symptoms, the character of the stools, and other indications, and being able to exclude other possible causes, I believe we are justified in making a probable diagnosis of sigmoid disease associated with a surgical pathology.

CASE 4.

Mr. L——, aged twenty-four, a soldier, seen in consultation with Major A. M. Smith, January 30, 1904. He had been taken suddenly ill December 23, suffering from intestinal colic of obscure origin. Two weeks later he was well enough to return to duty. On January 23 he had another attack of greater intensity, accompanied by symptoms of acute obstruction. The pain and tenderness were located chiefly over the lower part of the descending colon, and there was a distinct tumor or mass the size of a goose egg to be distinctly felt. When I saw him these symptoms still existed, and for one week he had no movement of the bowel, notwithstanding the energetic use of cathartics, rectal injections, etc. Two days later, as a result of a large injection, he passed large quantities of mucus and later some fecal matter. Soon afterwards the stools became more natural, and he gradually improved, to be discharged March 16th, and has remained comparatively well since. The condition that produced the symptoms was undoubtedly a sigmoid ulcer with or without a twist or angulation of the gut. Major Smith, with his extensive Philippine experience, thought the ulcer to be dysenteric, and this is very probable though a careful microscopic examination of gelatinous masses passed his rectum failed to show any amebæ.

DISCUSSION

Dr. Ezra C. Rich: It is totally unexpected to me to speak upon the subject. I saw one of Dr. Niles' patients in the hospital. Personally, I have had only one case in my practice in which there has been a serious involution of the sigmoid flexure, and that was accompanied by a large ovarian cyst, and the condition of the sigmoid was not discovered until some two weeks after the operation for the cyst.

It seems to me very important that the medical profession generally should urge very early operation for obstruction of the bowel. There is no danger if it is done early enough to relieve the condition, if it can be done without endangering the patient's life from peritonitis solely.

Dr. E. F. Root: There are two or three things I would like to mention in regard to the conditions of the sigmoid that Dr. Niles has mentioned. In the first place he was not responsible for the septic peritonitis that occurred in the case he mentioned, I am satisfied, because I happened to look around the corner, and saw the case during the early part of the operation, and it was certainly as necrotic as it could be, and it was foretold by the operator that it would rupture, and every precaution was taken. In case of ulcer of the bowel, where there is contraction and consequent narrowing of the bowel, an anastomosis should be made of the portion of the bowel above and below the sigmoid, and no other operative procedure take place at that time. Leave the ulcer and the inclusion entirely alone, if possible leaving an open wound, or, if it has not gone on too far, closing the wound.

ARTERIOSCLEROSIS*

By Herbert W. Jones, M. D.

MINNEAPOLIS

Osler defines the term as follows: "A condition of thickening, diffuse or circumscribed, beginning in the intima, consequent upon primary changes in the media and adventia, but which later involves the other coats. The process leads, in the larger arteries, to what is known as atheroma and to endarteritis deformans."

The other text-books have their separate definition, all different and all unsatisfactory. A comprehensive definition has not yet been given. The nomenclature of Thoma, who distinguishes angiosclerosis as a hardening of the vascular system, arteriosclerosis, and phlebosclerosis for the arteries and veins, seems anatomically and clinically rational.

We owe to Gull and Sutton the conception of arteriosclerosis as an independent disease and the coinage of the term *arteriocapillary fibrosis.*

Atheroma is often used synonomously with arteriosclerosis, but the distinction should be kept in mind. Sclerosis is an inflammatory process, while atheroma is a degenerative softening of the larger vessels.

Anatomy.—The arteries and veins consist of three coats,—the intima, media, and adventitia. The intima consists of a layer of endothelial cells below which is a fibrous layer and then an elastic membrane. The media is made up of smooth muscle fibres, while the adventitia is fibro-elastic tissue.

The intima is avascular, receiving its nourishment from the blood stream, while the media and adventitia are supplied by the vasavasorum.

A capillary consists of a single layer of endothelium cells joined together by cement substance, and as they gradually change to artery or vein the fibrous, elastic, and muscular coats are added.

Etiology.—Stengel says: "Arteriosclerosis is a physiologic process of old age. The earlier occurrence of the disease, or the more extreme grades of its severity, are dependent on a variety of causes, among which certain chronic intoxications, namely, syphilis, gout, chronic alcoholism, and chronic nephritis, are prominent."

Muscular exertion, mental strain, cachectic conditions, as carcinoma, tuberculosis, or inanition, and sometimes acute infections, as rheumatism, scarlet fever, typhoid, etc., produce the change.

Just how these operate is not known. It was formerly thought that the poisons directly irritated the walls of the vessels, and an inflammatory thickening ensued. Another theory is that the poisons in the blood produce a high blood pressure in the effort of nature to hasten elimination. This high tension leads to a weakness and degeneration of the muscular and elastic tissue and overdilatation of the vessels until the inflammatory reaction comes to the rescue, and increases the fibrous tissue in the intima, and thus maintains the integrity of the vessels and the high blood pressure.

The condition of a man's arteries depends primarily on what kind of arterial stuff he inherited, and, secondarily, on the acquisition and ability to eliminate poisons. We will not discuss these causes in detail, but simply refer to the conclusions of some of the papers on arteriosclerosis read at the last meeting of the American Medical Association. Drs. Thayer and Brush, of Baltimore, have a paper on the relation of acute infections to arteriosclerosis, and their conclusions, based on analysis of 4,000 cases, are as follows:

First. The percentage of palpable, radial arteries is materially higher among individuals in whom there is a history of heavy physical labor and of the use of alcoholic stimulants than in the remaining cases. This percentage is appreciably higher in the cases giving a history of heavy work.

Second. The percentage of palpable radials is higher among those cases presenting a history of severe infectious diseases than among those in which this history is absent or among those in which a history of no causal factor could be obtained. The proportion is, however, far below that in the case of work or alcohol.

Third. Rheumatism appears to be the acute infection after which the percentage of palpable vessels is highest, and next to rheumatism comes typhoid fever.

---

*Read before the Minneapolis Medical Club, November 16, 1904.

Dr. Drennen, of Hot Springs, discusses syphilis in the causation of arteriosclerosis and thinks the indiscriminate use of mercury is as large as, or a larger factor than, the syphilis. He thinks the combination of syphilis and excessive mercurial treatment is very bad for arteries.

Dr. George Dock, of Ann Arbor, says that nephritis evidently causes arteriosclerosis, both directly by allowing irritant poisons that should be eliminated, to remain in the blood, and secondarily by increasing blood pressure.

Dr. Billings, of Chicago, discusses lead as a causative factor in arteriosclerosis, and his conclusions, drawn from a long list of reports of experimental work, are as follows:

"From the above opinions of the effect of lead on the blood vessels and on those organs which, when diseased, have an associated or resultant thickening of the walls of the vessels, we may conclude that lead may produce a disease of the blood vessels either directly or indirectly—directly, as shown by the numerous experiments on animals. Probably this is by the direct influence on the vessel of the lead in the circulating blood. Doubtless the walls of some of the larger arteries may be affected through the alteration in the nutrition because of the primary toxic enarteritis with the tendency to thrombosis and obliteration of the vasa vasorum. The undisputed fact that lead may cause gout, and the equally true proposition that in gouty individuals arteriosclerosis occurs early, may explain the influence of lead in producing arteriosclerosis in rare cases."

Experimental and clinical observations prove incontestably that lead will cause nephritis. This is usually the contracted kidney, which, sooner or later, has associated with it the thickened arteries and left cardiac hypertrophy. Therefore lead intoxication may lead directly and indirectly to arteriosclerosis.

Dr. Richard Cabot, of Boston, writes an article on the "Relation of Alcohol to Arteriosclerosis," and his opening paragraph reads, "Most standard text-books assert unconditionally the importance of the excessive use of alcoholic liquors in the production of arteriosclerosis. Standard treatises on the heart and blood vessels are equally emphatic. In Nothnagel's magnificent 'Specielle Pathologie and Therapie' Schrötter says after reviewing the literature, 'Alcohol is considered by practically all writers on arteriosclerosis as the chief cause or at least one of the most important causes of the condition.' Yet Schrötter himself seems to be somewhat dubious regarding the evidence on which the belief is founded; and there are others, such as Duclos and Ribberts, who are yet more outspoken in their skepticism."

Cabot's conclusions are—

1. Only 6 per cent of 283 cases of chronic and excessive alcoholism under 50 years of age showed any evidence of arteriosclerosis.
2. Of 45 cases of arteriosclerosis examined by me at the Massachusetts General Hospital only 13 per cent gave any history of alcoholism.
3. Of 656 autopsy cases of arteriosclerosis, only 95, or 14.5 per cent, were under the age of 50.
4. Out of these 95 cases under 50, in which arteriosclerosis was found, post mortem, only 21 per cent, and if we exclude cases complicated by chronic nephritis, only 17 per cent, appear to have consumed alcohol in any notable excess.

Osborne, of New Haven, in the New York Med. Jour., of Aug. 20, 1904, has an interesting article on the effects of the six ductless glands on blood pressure. He says the thymus, thyroid, testicles, and ovaries produce vasodilator stuff, and that the thyroid, which is the great gland of vasodilator action, atrophies after the age of 50, and hence blood pressure rises and arteriosclerosis ensues.

The suprarenals and pituitary body produce vasoconstrictor stuff, and their overproduction produces high tension and sclerotic arteries. This is certainly interesting, and as organotherapy is in style just at present we shall probably hear more of this theory.

PATHOLOGY.—Councillman divides the forms into (a) nodular, which is common in the aorta, and which leads to atheromatous patches and aneurysm; (b) senile arteriosclerosis, in which the arteries are dilated and tortuous, and the walls thin but stiff, and infiltrated with lime salts, mainly calcium phosphate; (c) diffuse arteriosclerosis, called also arteriocapillary fibrosis, which affects both the aorta and its branches. This is the form which attacks men in the prime of life, and is due more to the intoxicating causes,—syphilis, nephritis, etc.,—than to age.

It is not in the province of this paper to go into the details of pathology. The muscular and elastic tissues undergo fatty, hyaline, or amyloid degeneration, and are replaced by fibrous tissue or calcareous infiltration. The vasovasorum are obliterated. The chief hyperplasia is of the fibrous layer of the intima, which narrows and finally occludes the lumen.

SYMPTOMS.—The arterial walls feel thick and tortuous, and can easily be examined at the radial, temporal, brachial, and dorsalis pedis.

The arcus senilis is due to a fatty degeneration consequent on arteriosclerosis. The pulse is small, hard, and forcible, and enlargement of the left ventricle, with intensified aortic second sound, occurs.

1. Commencing at the heart arteriosclerosis causes a deformity of the cusps with stenosis or leakage.
2. In the coronary arteries it causes angina pectoris, myocarditis, and sudden death.
3. When in the aorta it causes general muscular weakness, and possibly aneurysm. It may also lengthen the arch and thus push the apex downward and outward.
4. It is much less common in the pulmonary arteries, but when present causes dyspnea and cyanosis.
5. In the renal vessels it gives the small granular kidney.
6. Attacking the arteries at the base of the brain, it impairs mental vigor, and produces vertigo, headache, insomnia, confusion of ideas, irritability, and changes in habit and conduct.
7. In the internal capsule it may cause a temporary hemiplegia or aphasia from spasm or occlusion of vessels, or a permanent condition from hemorrhage.
8. In the cord it may give a chronic myelitis, syringomyelia, multiple sclerosis, or locomotor ataxia, or other systemic diseases of the cord.
9. Affecting arteries of the extremities it causes tingling, numbness, formication, purpura, cyanosis, a cold, harsh, dry skin, cramps, endarteritis obliterans, and gangrene or pseudotabes.

TREATMENT.—Treatment is well handled by Dr. Anders in an article read at the last American Medical Association meeting, and his advice in regard to prophylaxis and hygiene could well be taken to heart in this age of strenuous lives. Too many men live at high tension, and indulge in over-eating, and the ingestion of too much fluids. Excesses in all lines should be avoided. The high blood pressure should be reduced by elimination of poisons, rest (physical and mental), massage, and avoidance of fluids and such drugs as strychnine, digitalis, caffein.

These hygienic measures cannot be too strongly enforced on active, brilliant men between 45 and 60, as we have only too many examples of sudden deaths at banquets and public functions due to the effects of high blood pressure on diseased blood vessels.

Among the drugs, nitroglycerin and the nitrites hold first place. These lower blood pressure, relieve the heart, and open up partly or wholly closed vessels. The iodides have long enjoyed the reputation of removing the products of degeneration or inflammation, and are especially indicated where syphilis is suspected. In times past the iodides have been a hard dose for the patient, but since the introduction of the organic preparations we can prescribe them without losing our patient or interfering with his digestion or complexion.

Trunecek has made a solution of salts normally contained in the blood, and calls it inorganic serum. It was heard of several years ago as the "salt cure," and is very useful in cases with calcareous infiltration because calcium phosphate is soluble in solutions of sodium chloride.

Trunecek's original solution was made for hypodermic use, and contained sodium chloride, sulphate and carbonate, and potassium sulphate. It can also be given by mouth in tablet form. He used it to relieve the tonic contraction of the vessels and consequent pressure, and numerous writers have given reports of very satisfactory results. I have one man 80 years old, who for the last three or four years has had attacks of vertigo, forgetfulness, and impairment of mental vigor. He would sit down to breakfast at times, and forget to eat. He was gradually getting worse until about a year ago when he began taking the tablets, and after a three weeks' course had no more attacks for several months.

Osborn, whom I have mentioned before, in his article on the ductless glands, in relation to arteriosclerosis, suggests the administration of thyroid extract in certain cases over 45 years; also tying the artery of or removal of one suprarenal, as is now sometimes done to the thyroid for exophthalmic goitre.

MILK INFECTION*

By E. W. Humphrey, B. S., M. D.

MOORHEAD, MINN.

Of all diseases of children which come under the observation of the general practitioner, there is none more important than summer diarrhea, or cholera infantum.

It. is an acute infectious gastro-enteritis, affecting young children and characterized by large watery stools, profuse vomiting, high temperature, great prostration, and rapid wasting. It is the most sudden and dangerous form of gastro-intestinal inflammation to which children are liable.

Etiology.—The clinical features point unmistakably to a bacterial origin although no specific organism has yet been discovered. Shig discovered a bacillus as the cause of acute dysentery. Duval and Bassett isolated the dysentery bacillus, not only from the stools, but also from the scrapings from intestinal mucosa at autopsies, and in one case from mesenteric glands and liver. The dysentery bacillus isolated from these cases corresponded in morphology, culture pecularities, pathogenic properties, and reaction to specific serum with the dysentery bacillus isolated by Shig in Japan, Kruse in Germany, and Vidder and Duval in the United States.

Hess and Russell discovered bacilli in autopsies on cases of enterocolitis which bear a strong resemblance to the dysentery bacillus. They labelled this germ "*bacillus y.*" It behaves exactly as the dysentery bacillus, with the slight exception of forming a pellicle on broth.

I believe there may be more than one form of bacillus responsible for dysentery epidemics.

Diet.—The subject of diet leads to a consideration of milk as a factor in the production of summer diarrhea, whatever other predisposing causes exist. Everyone agrees that a rise in the mean temperature to 60° F., with the resulting increase in bacterial development in milk and an increase in the diarrhea in infants, is more than a coincidence.

The general predisposing causes of the disease are given by Newssolme, who derives his conclusion from the general study of statistics. He believes that the fundamental favoring condition is unclean soil from which the specific germs, not yet isolated, infect the air and are swallowed usually with food, especially with milk, and he therefore finds that communities without water disposal of sewerage or careful scavenger systems have a higher mortality from diarrhea than those communities situated on a loose, rather than a rocky, soil. The disease affects chiefly children of the laboring class in cities, the industrial occupation of the mother having a possible influence; and there is a general direct relationship between temperature and diarrhea, and inverse relationship between rainfall and diarrhea.

Symptoms.—Infancy and childhood are the periods of life in which summer diarrhea is most prevalent and fatal. The high rate of mortality among infants and children during the summer months results from disorders of which diarrhea is an accompaniment, and the rate exceeds that from all other diseases during the same period. The greatest susceptibility to summer diarrhea is found between the ages of six and eighteen months, during which time the death rate is many times that seen at any other age.

The death rate seems to divide this subject into two classes: First, that of early infancy, and, secondly, that of late infancy. It is a common clinical observation that the persistency of digestive disturbances due to the introduction of an irritant diminishes with the age of the child after two years, so that with increasing age there is a steady decrease in the severity of the diarrheal disorders, and a corresponding decrease in the mortality from this cause. The first class alluded to includes infants during the milk-feeding period up to about the middle of the second year, while the second class includes infants from eighteen to thirty-six months of age. After the latter age severe attacks of diarrhea are so infrequent as rarely to require the attention of a physician.

In this disorder the onset is sometimes sudden, being ushered in by convulsions, vomiting, and diarrhea. There are usually high temperature, thirst, and nausea, which makes the infant snatch at food, but the child pushes it quickly aside as soon as a few mouthfuls have been swallowed. Restlessness is nearly always present. The stool may change suddenly, or there may be an interval of two or three days of preceding departure from the normal in frequency and character. There may be a great deal of colicky pain.

---

*Read before a union meeting of the Clay-Becker (Minnesota) and Cass (North Dakota) County Medical Societies, at Fargo, N. D., September 26, 1904.

The infants, while in apparently perfect health, may develop vomiting, the matter ejected being at first the contents of the stomach but little changed, highly acid, or in dense curds. This is soon followed, however, by a watery, mucoid, and, though rarely, later by a bile-stained fluid, less acid or even alkaline in reaction. Diarrhea is frequently accompanied by, and invariably follows, the onset of the disturbance. The first dejections may be nearly normal, but they quickly change, showing evidence of fermentation and, later, of putrefactive processes; and finally they become serous. The odor of the stool varies from the normal acid to intensely fecal and later to a sickening, musty smell.

The infant, apparently well nourished and playful, quickly shows signs of systemic disturbance in fretful, peevish irritability and restlessness, with the head rocking, an anxious face, a persistent whining cry, pyrexia, dry mouth, softened and flabby tissue, and muscular atony. The depressed fontanels, sunken, lusterless eyes, sharply defined temporals, drawn features, with intense thirst, give evidence of great drain of fluids. The abdomen, at first tympanitic, may soon become flabby and depressed, and the extremities cold, although the rectal temperature may be from 103° to 106° F. Convulsions may usher in the attack, following the initial vomiting by a few hours, or appear only at the final stage, or occasionally they may not develop. Within twenty-four hours from the onset, and frequently earlier, the algid stage is reached with pallor and cold superficies, though the internal temperature may be high. The restlessness changes to a stupor, accompanied by hyperesthesia and irritability when disturbed, but rapidly subsides into semicoma with shallow breathing, collapsed veins, pulseless radials, half-closed, filmy eyes, and terminates in death by convulsions or asthenia.

This picture presents symptoms of acute poisoning from the gastro-enteric tract, occurring in the stage of apparently perfect health and terminating fatally in from twenty-four to forty-eight hours. It is extremely interesting to note the varying opinions of the most competent observers as to its frequency. One eminent observer of wide experience among diseases of children recently stated that he had seen but three cases of undoubted cholera infantum. Other writers of equal prominence speak of its occurrence as more common. These widely different opinions as to the frequency and fatality of cholera infantum may be reconciled only on the ground that we have no common standard for the diagnosis of this grave disease. The prevailing opinion seems to be that so-called cholera infantum is extremely rare and almost invariably fatal. As far as clinical evidence goes, cholera infantum may be considered an intense form of gastro-enteritis or dyspeptic diarrhea plus some unknown intoxication. The startling mortality from summer diarrhea is confined almost entirely to bottle-fed babies. Statistics show that in the fatal cases of summer diarrhea less than three per cent are exclusively breast-fed babies.

Treatment.—In the presence of summer diarrhea, however mild the symptoms may be, the first dietetic principle is absolutely to interdict the use of milk. This injunction must be strongly emphasized, lest the mother in her anxiety be tempted to give the child "a taste of milk" to prevent it from starving under the seemingly heroic treatment, or because the child objects to the change in the taste, and refuses to take the full amount of the substituted food. The reason for the withholding of milk should be explained to her, and assurance be given that there is no danger of starvation under the new plan of feeding.

By enlisting her co-operation upon rational grounds much harm to the child may be prevented, and meddlesome interference without the physician's knowledge may be avoided. In such cases it should be explained that the continuation of milk-feeding becomes a serious menace to the child by furnishing a constant fresh supply of the food which offers the most favorable culture medium for the bacteria already swarming in the intestinal canal. Milk starvation of the infant really means starvation of the milk bacteria, and as the culture medium ceases to be introduced into the infected bowel, the great bulk of these organisms perish for the want of favorable cultural conditions.

The next question is, What substitute for milk should be used, and how long should the milk be withheld? It is often very difficult to determine in a given case which preparation of food to use. If there is evidence of acid fermentation, barley water and other cereal decoctions are usually contraindicated, while if there is evidence of albuminoid decomposition, broths, beef juices, and albuminous water should not be given. It must also be remembered that the extract of the beef juices or broths stimulate peristalsis, and tend to keep up the diarrhea. In those cases in which it is impossible to determine the nature of the pathological process,—and they make up the greater majority,—the cereal decoctions are more liable to agree than are preparations of albuminoid proteids. In general, therefore, unless they are distinctly contraindicated, it is safer to begin with the cereal decoctions. I usually prescribe the following:

Add two even tablespoonfuls of barley or wheat flour to one pint of water. This is to be boiled for twenty minutes, and strained, boiling water being added to make the quantity one pint. When the mixture has cooled to a temperature of 100° F., add one teaspoonful of diastase.

If barley is used in this strength it will furnish the child a food containing approximately, 0.64 proteids, 0.15 fat, and 0.4 soluble carbohydrates. If the wheat flour is used the mixture will contain approximately, 0.8 proteids, 0.46 fats, and 2.4 soluble carbohydrates. A small quantity of this is given every two hours, and boiled water may be given at any time for the thirst.

In resuming the milk diet grave errors are often made in giving too strong a mixture. The use of the milk must not be commenced until the stools are nearly normal, and do not exceed three in twenty-four hours; and not more than one teaspoonful of milk should be added to each feeding of the cereal water for the first twenty-four hours. If this is well borne, the quantity may be increased one teaspoonful a day. When six teaspoonfuls can be taken without harm the increase may be at the rate of half an ounce per feeding every two or three days until the customary milk strength is reached. If there is a return of the diarrhea upon using the milk it must be discontinued at once. The mother or nurse must be instructed to do this on her own responsibility. In a few days there will be no unpleasant results if the milk is commenced in from a fourth to a third of its usual strength. It is a dangerous practice, however, to begin with so strong a mixture. Time and again I have known the disease to return in a greatly aggravated form for that reason. After a severe attack of summer diarrhea many children will be able to digest but a very weak milk mixture for the entire summer. In these cases scraped beef, beef juices, and predigested cereals are our main reliance. A teaspoonful of one of the soluble proprietary foods may be added to each feeding of the dextrinized barley.

The baby should be bathed at least twice a day, but very gently, moving it as little as possible. The bath often seems to allay the thirst to some extent, and always allays the restlessness. The mouth of the patient requires a great deal of attention. Nothing keeps it better than ordinary cold water or slightly alkaline water (sodii bicarb., 1 gr. to the ounce). It must always be washed out before the food, and if we can risk it without exciting fresh vomiting also afterwards. The swabbing out of the mouth not only serves the purpose of keeping the part clean, but also allays the thirst and the accompanying restlessness.

Another point which the nurse must be extremely careful about is the thorough scrubbing and disinfecting of her own hands after having attended the infant. This is most essential, as by infecting the baby's food with even the smallest particle of fecal matter the sickness which has just been stopped with great difficulty may be started again.

Drugs.—Of these bismuth has stood the test of time. The subnitrate should be given in doses of 10 grs. every two hours in chalk mixture and mucilage as a vehicle. Smaller doses are of no use, and much larger ones are undesirable. Salol, ½ gr., alone or with bismuth, every two hours, is recommended. Resorcin, ¼ to ½ gr., with chalk, bismuth, and opium, every two hours, is also recommended.

Among other remedies recommended may be mentioned various acids, notably lactic and dilute hydrochloric for their supposed effect on intestinal fermentation; and alkalies, lime water, and bicarbonate of sodium in vomiting and acid fermentation; salicylate of sodium, 1 to 2 grs., every two hours is given to a child of one year for its effect on persistent loose movements. It is unnecessary for me to mention more of these. Their steadily increasing number is sufficient evidence of their general inutility.

Sedatives.—Opium should be used with caution, and not at all until the intestinal tract has been thoroughly evacuated, when it is of the greatest use to quiet restlessness and diminish the intestinal peristalsis. Dover's powders, ¼ to ½ gr., repeated every two hours until an effect is produced; tinctura opii camphorata in five minim doses; and tinctura opii, ¼ to ½ minim doses, are of equal merit. Hypodermic injections of morphine, 1-100 gr., are of especial value when medication by the mouth is counterindicated, and an immediate effect desired.

Stimulants.—These are needed in all severe cases accompanied by marked prostration and cardiac weakness. Good whiskey and brandy stand at the head of the list, and should be given in doses of from 10 to 20 drops, diluted, every two or three hours. In mild cases and those in which the heart action is good, and there is no marked prostration, it would seem better practice to omit the stimulants until the symptoms call for them. Instead of whiskey or combined with it, strychnine, 1-200 gr., may be used.

In case of collapse, such as occurs in weak children, and in severe forms of the disease, hot mustard baths, heat applied to the extremities, and injection of hot water into the bowels are immediately indicated. In case the body fluids have been drained away by frequent movements saline solution injected into the bowels is to a certain extent absorbed, and serves to counteract this condition, but for more rapid effect hypodermoclysis is of the greatest service. For this purpose, normal salt solution may be injected into the cellular tissue of the buttocks, thigh, or back. The solution and instrument should be absolutely sterile, and ½ pint, at least, should be injected in twenty-four hours.

For the fever alone, treatment is not often required after the first twenty-four hours. When, however, it persists, and is accompanied by restlessness and other nervous symptoms, frequent bathing is indicated. The patient should be put into a bath of a temperature of about 100° F., which should be rapidly reduced fifteen or twenty degrees by addition of cold water. The bath may be continued for from five to fifteen minutes, after which the child should be thoroughly dried and wrapped in a blanket. A return of the symptoms calls for a repetition of these procedures every two hours.

Rectal irrigation with ice-water, carried high into the bowels and allowed to return freely, is also of great value, alone or alternated with the bath.

Lavage of the Bowels.—As with all useful measures, irrigation of the colon has been overdone. I fail to understand why a colon that is emptying itself every thirty to ninety minutes requires washing out. In irrigating one of these active cases after a passage, we find the water returning clear. Irrigation is of the greatest service when the stools are infrequent and foul. It is also useful in active cases having from six to eight passages daily, particularly if there is any blood or much mucus. The irrigation is carried out at eight, twelve, or twenty-four hour intervals, depending upon the nature of the case. As a rule a 1 per cent boric acid solution or a normal salt solution is employed. If the amount of the mucus is very large, or if the stools contain blood, a 1 per cent solution of tannic acid is used instead. It is well to prepare two quarts of the solution to be used, and discontinue when the water returns clear. The temperature of the solution should range between 95° and 100° F., except in cases of high fever, when it may be used as cold at 60°.

Vomiting.—Most of these cases begin with more or less vomiting. When this persists, all medicine and food by the mouth should be stopped. Stimulants, hypodermically, food by the rectum after lavage, sedatives (especially morphine) in small doses, subcutaneously and repeated until an effect is produced, are indicated; and for such cases as do not yield to this treatment stomach-washings are of the greatest value.

An important adjunct to successful treatment is fresh air. Children are to be taken into the open air as soon as possible on good days, and if their sick room be hot it is much better to move their bed when possible into the open air during tne entire day.

After-treatment.—In certain cases the bowel symptoms persist with more or less severity for many weeks or even months, in spite of all we can do. For some of these cases lavage of the bowels with saline solution two or three times a week is of advantage. In other cases, especially those in which the movements more or less constantly contain small quantities of blood, indicating ulceration of the bowels, astringent injections may be used. Silver nitrate solution, 1 to 1000, in small quantities may be injected into the bowels two or three times a week, and a preparation containing tannigen, beta-naphtol, and bismuth and creosote three or four times a day. Some cases do better upon an acid mixture than under the continuance of the astringent and antiseptic treatment, when the following preparation answers:

HCl dilute, minims—xvi.
Saccharated pepsin, 1 dr.
Bismuth subnitrate, 2 dr.
Syrup, ½ oz.
Water, 2 oz.

Sig.: One teaspoonful after each feeding or nursing.

Other cases fail to respond to any treatment, and for these the one essential is a change of climate, which is often surprising in its results. Iron, arsenic, and cod-liver oil should be used in convalescence.

To recapitulate: In every case of summer diarrhea, first, starve the patient for twelve to twenty-four hours; second, empty the intestinal tract; third, stop the milk until the movements are again fecal, when it should be begun very cautiously; fourth, starchy foods are usually the best substitute for milk; fifth, bismuth, in 10 gr. doses, frequently repeated; sixth, lavage of the bowels. With this treatment, under favorable conditions and in previously healthy children, the disease will terminate favorably in the great majority of cases.

THE HOSPITAL BULLETIN

ST. BARNABAS HOSPITAL

MINNEAPOLIS

AN UNUSUAL CASE OF PIGMENTATION.

In the Service of Dr. C. H. Hunter

Reported by Dr. W. D. Shelden

Mrs. G——, aged 36, housewife. Father died of apoplexy at 86; mother well, age 71; four brothers living and well.

Patient was married at 21 years. Has had four children. After second child had three miscarriages, each of which occurred between the second and third month.

Patient had whooping cough at four years, and measles at 15 years. Had several attacks of grip. Four years ago had rheumatism, which was troublesome for about one year. No subsequent subjective symptom.

In July, 1903, she began to complain of distress in the epigastrium; no colic pains. Later she noticed that she was losing strength. In October she complained of distress after eating with heartburn and gas eructations. Also had some tenderness about the navel. Complained of faint-like spells and general weakness; was sallow and looked badly; menses normal. At New Year's, 1904, was sick in bed with what was diagnosed nervous prostration by family physician. Complained mostly of weakness, dizziness, and distress in stomach. In April had an attack of grip. Had a chill and headache, temperature 102° for two days; no cough. Following the grip weakness increased; attempts to sit up caused dizziness and nausea; no vomiting; was constipated. She was very despondent. After two weeks in bed began to have attacks of weakness and fainting spells. These were associated with no temperature, no dyspnea, no increase of pulse. Attacks lasted for an hour or so. Gas eructations and heartburn preceded and accompanied the attacks.

On April 23d had a severe attack at 5 a. m., characterized by rapid breathing, palpitation and numbness, and prickliness of hands and feet. Contraction of flexors of arm and forearm, retraction of head and opisthotonos. The attack lasted three hours. Since then has had several attacks, but in none have the contractions been so marked.

On July 30th, 1 a. m., at St. Barnabas Hospital, the last attack occurred, and during this the respirations numbered 100 or more, pulse 70. There was some muscular twitching. Had ten or more such attacks in all.

About May 1st was able to get out of doors, in a wheel-chair, still complaining of weakness, dizziness, and stomach symptoms. From this time she gradually but slowly improved.

On June 1st she complained of pain in various regions, and could trace the nerve trunks quite accurately on locating the pains.

About July 1st she suffered considerably from tympanites, and distress in the abdomen. Says that face was bloated and swollen; could scarcely see; hands were stiff and swollen. She thought that the medicine may have had some relation to the tenderness in stomach.

About the 29th of May, she noticed pigmentation on the body, with dark-brown spots on the face, forearms, hands, and soles of the feet. About the 12th of June a dark-brown spot began to appear on the lower lip opposite the right upper lateral incisor. Menstruation was regular, but scanty; blood pale during first half of flow, during later part thick and clotted, and darker in color; no pain; no discharge; urination normal. Her sleep was disturbed much during April and May. Since the middle of May she has gradually improved in strength and weight. Color was poorest about April 23d.

Her medicinal treatment, as given by her attending physician, consisted of administration of iron, arsenic, and strychnine. Arsenic was given in form of Fowler's solution. It was begun on May 9th with 3 drops three times daily, and was continued in gradually increasing doses until 17 drops were given three times daily, when it was discontinued on July 13th. She had never taken arsenic before.

Examination on Aug. 1st: Patient fairly well nourished; weight below normal; slightly pale, no edema; skin dark; pulse soft and of normal frequency, fulness and tension; tongue slightly coated; pupils react to light and accommodation; heart and lungs present normal relations, abdominal wall of lax contour, about normal; spleen enlarged on percussion, and palpable 3-4 cm. below costal arch; lower pole of right kidney palpable, apparently of normal size; no change in color of hair; scalp normal, but lighter in color than face; darker line of pigment at border of hair; on the lower lip is a dark-brown spot opposite upper lateral incisor; the tooth is decaying, and the rough edges of the tooth impigne on the lip directly over the spot; a small spot is present on upper lip in the median line; no discoloration is present within the mouth; the skin over the abdomen is the most deeply colored, being of a dull brownish color; the epidermis is dry, and is exfoliating; lineæ albicantes are lighter than surrounding skin, but they are not white; the margins are not intensified by pigmentation; the navel and middle line are darker than the surrounding skin; some small dark spots are also present.

The chest presents the same diffuse, dark coloration, with scattered brownish spots, but as a whole is of a somewhat lighter shade.

The face is lighter than the chest. The freckles and moles formerly present are darker than before. New dark spots have also appeared. Some new spots have developed on the ear.

The hands, arms, and feet are lighter than the abdomen, and are about the same shade as the face. Some new spots have appeared over the palms and soles. The skin, especially of the chest and abdomen, is dry and harsh, and is the seat of a bran-like desquamation. There are no keratoses.

Knee reflexes are normal. Sensation normal. The cornea is anesthetic. The pharynx gives only a slight response to titillation. There is no corneal reflex. The abdominal reflexes are present. Urine, July 16, is acid; sp. gr. 1024; no albumen; no sugar; few epithelial cells and mucous shreds.

Stomach contents, July 24: Fluid clear; sediment of the undigested bread of acid odor; acid reaction; no free HCl; congo not changed; lactic acid absent; starch granules abundant.

During the latter part of April her physician made an examination of the blood, and reports this finding: Number of reds low (exact number not given); hemoglobin 40 per cent; leucocytes normal; normoblasts and megaloblasts present. An examination made about July 10, gave hemoglobin 54 per cent. Reports of the hospital show the following: On July 17, reds 2,885,000; leucocytes 2,750; hemoglobin 62 per cent; some poikilocytosis.

July 22, reds 3,412,500; leucocytes 3,000; hemoglobin 65 per cent; less poikilocytosis.

July 24, reds 3,945,000; leucocytes, 9,660; hemoglobin 91 per cent; a few poikilocytes and microcytes. No nucleated reds were found on repeated examination.

Treatment: Patient was placed on tonic treatment of iron, nux vomica, and arsenic (Fowler's solution), 10 drops three times daily. Adrenalin 20 drops, 1-1000, three times daily, hypodermically. Later the ext. suprarenal was given in 5 gr. doses. Fowler's solution was discontinued Aug. 3. The administration of adrenalin, hypodermically, was followed by subjective improvement. The blood pressure by Riva Rocci, which was usually 100-110, measured 135 two hours after injection of adrenalin.

The interest connected with the case, of course, hinges upon the diagnosis. As the case appeared at the hospital, the data regarding the use of Fowler's solution were uncertain, the patient stating that she had taken drop medicine in gradually increasing doses for some time, but the dates were lacking. It was impossible to obtain accurate data as to the appearance of the pigmentation. The presence of a brownish pigmentation of the skin, with spots on the mucous membrane of the lips and with a history of asthenia with stomach disburbance, naturally suggested the consideration of Addison's disease. None of the symptom-complex of Addison's were present in the usual degree, and the pigmentation developed during a period of progressive improvement.

Regarding the attacks of weakness described in the history and those observed in the hospital, it seems certain that they were largely nervous in character. The distribution of the pigmentation was contrary to that usually seen in Addison's disease.

After the patient left the hospital she obtained the data given regarding the administration of arsenic, and the appearance of the pigmentation. As her physician suggested, and as the history shows, the condition with pigmentation was engrafted upon an ailment of several months' standing. Her condition was at its worst about April 20th; improvement followed. On May 9th she began with Fowler's solution. About May 29th pigmentation was first noticed. On June 12th the spot on the lip began to develop. About June 1st she complained of tenderness of the nerve trunks, as described by her physician. About July 1st she was troubled with tenderness of stomach, tympanites, and puffiness of the face. Fowler's solution was discontinued on July 13th. It was given again from July 16th until Aug. 3. About Sept. 1st a considerable portion of the pigmentation came off with the fine bran-like scales. A letter dated Oct. 24, 1904, states that the pigmentation has faded much more, but not entirely, and that the mole-like spots are lighter, but that the dark spot on the lip is still there. General strength is slowly improving. This succession of events makes it practically certain that this condition of pigmentation was simply an unusual result of taking an ordinary course of arsenic treatment.

What her primary condition is, is another question. The supposition of her physician may be the correct one, namely, that she suffers from pernicious anemia. A study of her blood record would suggest it, although the available data are as yet insufficient to warrant such a diagnosis.

UNIVERSITY FREE DISPENSARY CLINIC

A CASE OF DIABETES MELLITUS WITH MULTIPLE NEURITIS, SO-CALLED DIABETES TABES

In the Service of Dr. Geo. Douglas Head

Symptoms of neuritis, either circumscribed or multiple, sometimes appear in the course of diabetes and produce a clinical picture rather confusing until the sugar has been discovered in the urine. In the following case, prior to the detection of the sugar in the urine, locomotor ataxia, syringomyelia, and multiple neuritis were considered, and only when the urine was found to contain sugar was the diagnosis made plain. The age of the patient, the absence of pronounced muscular atrophy, and the history were against syringomyelia. The partial slow reaction of pupils to light, and the absence of a luetic history did not coincide with a diagnosis of tabes, while the absence of knee-jerk, pronounced Rhomberg, history of lightening pains, storrage gait, weakness in lower limbs, bladder disturbances, hyperesthetic and anesthetic areas, marked incoördination of lower limbs, inability to detect difference betwen heat and cold, preservation of tactile sensation, but inability to distinguish pain, made a very confusing picture.

Mr. D——, 53 years of age, married, five children living and three dead, denies gonorrhea and lues. Was well until twelve years ago when he began to lose in weight, and drank unusual amounts of water. His weight at that time was 235 lb., and now he weighs 135 lb. He consulted a physician who said he had sugar in his urine, and put him on an appropriate diet. For a number of years he did fairly well, but continued to lose in weight. He consulted other physicians, who examined his urine and could find no sugar. For the last year he has been unsteady on his legs, and often walks as if drunk. His legs are weak, and he is bothered much with rheumatic pains and burning in his legs and feet. Occasionally, while walking one leg will give out from under him, and he will fall unless he supports himself. For the last six months this weakness in his legs has increased, and he now uses a cane. He cannot hold his urine, and is bothered with dribbling. Drinks a good deal of water, and passes large quantities of same.

On examination, the patient is a rather poorly nourished man. He walks with an unsteady gait, his eyes upon the floor. He sways markedly on closing his eyes. When told to sit down, he steadies himself with his arms. Pupils react very slowly, and only partially to light, but well to accommodation. Knee jerk is absent. Pronounced weakness in muscles of lower limbs not marked in the muscles of the arms. Anesthetic areas in mammary regions on both sides. Tactile sensations intact. Sensations of pain are not detected in some areas of lower extremities; in others much delayed. Marked incöordination of lower limbs, less so of arms. Sensations of heat and cold not recognized by patient on lower extremities, sthenic sensations elsewhere promptly detected. No tenderness along the course of the nerves of the lower extremities. There was nothing suggestive in the examination of the organs of the body. The urine was light in color, had a sp. gr. of 1042, and contained 5 per cent of sugar. No albumen or casts were present.

Diagnosis.—Multiple neuritis, complicating diabetes mellitus (diabetic tabes).

CLINICAL MICROSCOPY

Conducted by George Douglas Head, M. D.

DETERMINATION OF RENAL FUNCTION

Within the last few years a number of different methods have been devised to determine the functional activity of diseased kidneys. In estimating the damage which an inflammatory process has produced upon the function of the kidneys one must take into account, first, the injury done to the filtering or dialyzing structure of the kidneys, and, second, the damage sustained by the renal epithelia, which make over into urinary products the waste materials of the blood.

The determination of the freezing point of the urine (cryoscopy), and the methylene-blue test are the two best known methods for ascertaining the filtering function of the kidneys, while the phlorizin test is employed to measure the kidney function as a secreting gland, that is, the ability of the renal epithelia to elaborate urinary products from the blood. Croftan, in his excellent work on clinical urinology has given a very clear and conservative résumé of the value of these methods in determining the efficiency of the renal function. In summing up the value of cryoscopy as a measure of kidney activity Croftan says: "Cryoscopic examinations of the blood and urine give very little information that cannot also be obtained by the ordinary chemical and microscopical examinations of the urine. The method requires great care, skill, and experience. The sources of error in performing the determinations themselves are many. The freezing point of the urine is influenced by many factors that must be carefully controlled if the results are to be properly interpreted."

Of the methylene-blue test the writer says: "All in all, the methylene-blue test is inferior to the cryoscopic test, and yields very little information that cannot be obtained in other ways."

"The results obtained are never free from ambiguity, and unless very gradually interpreted are apt to lead to gross misinterpretation."

Of the phlorizin-test the author has this to say: "Only if the elimination of sugar is unusual, or if no sugar appears at all, should serious impairment of the renal function be diagnosed. On the other hand, the sugar values may be normal in advanced unilateral kidney disease or in affections involving only a part of the kidneys. Because the well organ or the healthy parts of the diseased kidneys may assume a supplementary compensatory overactivity.

Croftan, however, believes that by combining the methylene-blue and phlorizin-tests valuable information can be secured in determining the kind of renal degeneration, as in acute and subacute nephritis methylene-blue is readily eliminated while phlorizin glycosuria is reduced or absent.

Even here it seems to the writer that these tests are unnecessary, since, by a careful study of the quantity of urine excreted, the specific gravity, amount of solids, and character of casts, supplemented with the clinical history of the case and the physical examination, one is rarely in doubt as to the kind of nephritis with which the patient is suffering. Practically in most of these cases where there is doubt the question which arises is, Have we a frank acute nephritis to deal with, or have we an acute exacerbation of a chronic nephritis? In this dilemma it does not seem possible that any of these tests would be of great help in coming to a correct conclusion.

CYTODIAGNOSIS OF THE PLEURAL EFFUSIONS

A study of the cellular elements in an exudate is sometimes of value in coming to a conclusion as to the nature of the disease process. Carter, in the Medical News, Oct. 1, 1904, presents a study of the cellular elements in 36 cases, 10 of which were pleural tuberculous effusions, 20 were probably tuberculous effusions, and six were pleural effusions following lobar pneumonia.

Carter's method consisted in studying the color turbidity, specific gravity, reaction, and the relative amount of albumen content. Some of the fluid was then centrifugalized for five minutes, dried cover-glass preparations made, and the sediment stained with Jenner's differential stain. A differential count of leucocytes was then made, and endothelial cells and presence of blood corpuscles noted. His conclusions were as follows:

1. A true pleural effusion has a sp. gr. of over 1010 with an average of 1017.9, a high fibrin and albumen content.
2. A pleural transudate has a low sp. gr. with an average of 1008, a small fibrin albumen content.
3. An almost certain diagnosis of tuberculous pleurisy can be made by the morphological examination of the fluid alone, and rests on its having a high sp. gr., 1012-1024, a large amount of fibrin and albumen with an accompanying lymphocytosis.
4. According to some authorities one may find a polymorphonuclear leucocytosis before the 3d or 4th day of a tuberculous pleurisy, in which case subsequent examinations will be necessary to establish a positive diagnosis.
5. A diagnosis of postpneumonic serous effusion lies in its high sp. gr., averaging 1016.5, large fibrin and albumen content with a polymorphonuclear leucocytosis, 58-92.5 per cent.

The temperature is usually much lower than in the tuberculous cases, unless complicating an active pneumonia, averaging at the outset about 101°.

A differential diagnosis between a pleural transudate and tuberculous pleurisy cannot rest alone on a differential count, as they both show lymphocytosis, but must rest on a more complete examination including the sp. gr. and the amount of fibrin and albumen.

NORTHWESTERN LANCET
A SEMIMONTHLY MEDICAL JOURNAL
The Official Organ of the Hennepin County Medical Society
W. A. JONES, M. D.................EDITOR
Editorial Office, 515 Pillsbury Building
W. L. KLEIN, PUBLISHER

SUBSCRIPTION, $2.00 A YEAR.

339-340 Lumber Exchange......................Minneapolis

DECEMER 1, 1904

BUTTERMILK

Buttermilk has long held a place in domestic therapeutics, and is frequently recommended by the physician when no other drink is suitable for his patient.

Buttermilk has no definite place in works on foods, but it has a function in a few diseases which nothing else can replace. It is a wholesome drink, and has decided diuretic properties. It must be used fresh, for it soon decomposes on account of the rapid multiplication of bacteria.

Buttermilk contains albumin, finely coagulated casein, salts, water, and sugar which is largely converted into lactic acid. There is less fat than in skimmed milk, hence it is not so nutritious, but is more acceptable in a few diseases than any other form of milk.

Chronic gastric catarrh with atrophy of the gastric glands, is one of the conditions in which buttermilk is adaptable. As many of these cases of chronic gastritis are due to over-indulgences in alcohol, or food intemperance, the simple diet of buttermilk will give the abused organs the needed rest by supplying a food easily assimilated and fairly nutritious. Buttermilk is said to be useful in some cases of diabetes, but cannot be relied upon to support a patient for any length of time.

The various "buttermilk cures" advertised through Germany are based upon many other so-called "cures," a complete change of living and environment, the withdrawal of heavy diet, and the substitution of a diuretic liquid food. A new buttermilk cure has been noted by the daily press, evidently originating with the Pasteur Institute in Paris.

Dr. Metchnikoff has suggested a serum prepared from milk as a remedy against old age. The best milk obtainable, goat's or cow's, is skimmed and well sterilized by boiling to destroy the "intestinal flora" after which a special bacillus is added to combat the ordinary bacteria of decomposition.

The removal of certain bacteria from milk is the important effort of the Parisian physician. He claims that bodily decay and old age are due to the presence of certain bacilli, and that the milk serum he employs destroys these bacilli, and thus the milk becomes an elixir of life. Almost anything may be expected now from the bacteriological laboratory since Prof. Moore, of Washington, has been able to cultivate, propagate, and distribute a bacillus through the mails which, if mixed with seed or soil, will enrich the ground many fold, and draw nitrogen from the air into the soil as a fertilizer. If such wonders as described in the Century Magazine for October can be accomplished, why is it not possible to find a bacillus that will act as an intestinal antiseptic?

If a serum for this purpose can be manufactured, the inventor will be besieged by multitudes.

ABSTEMIOUS PHYSICIANS

A curious society has originated in Berlin, Germany, the land of beer. The Society of Abstemious Physicians has been formed, and is gathering recruits all over Germany and Austria. The object of the organization is to discountenance physicians who patronize saloons, indulge in drugs, or engage in the manufacture of alcoholic beverages. The society maintains that it is the duty of the physician to teach the public how to maintain their health, and in order to do so the physician must set the example.

It seems strange that a prohibition sentiment should gain ground in Germany, yet stranger things have happened.

Christian Scientists have already invaded that country, and claim many adherents in the faith.

This same sect also claim that the Dowager Empress of China is a convert to Christian Science. If this be true then it is reasonable to suppose the sale and drinking of beer in Germany will soon be prohibited by law. The beer-loving German may be obliged to emigrate to Milwaukee, or he may be forced to adopt the methods of the Peruna clubs of North Dakota. Imagine a typical German drinking his beer out of a bottle supposed to contain patent medicine!

The principle, however, adopted by this new society contains at least a suggestion that might be adopted by a large number of physicians in America, namely the setting of an example to their fellows and patients. Too many physicians disregard the ethical effects of careless drinking, and too many resort to stimulants to restore their vigor from overwork and fatigue. It is astonishing how many physicians depend upon stimulants to help them through the day's work and worry. The number of men in the profession who break down from chronic alcoholism is appalling, and the number addicted to the use of morphine and cocaine is so large as to be discredited. Any sort of an organization that will keep the drinkers and drug-takers from exhibiting themselves as shocking examples would be welcomed as a benefit to the profession.

BOOK NOTICES

A TEXT-BOOK OF PHYSIOLOGICAL CHEMISTRY. By Charles E. Simon, M. D., of Baltimore, Second Edition, revised, and enlarged. Philadelphia and New York: Lea Brothers & Co.

This volume of 500 pages is worthy of high commendation.

The first edition received, as it deserved, a hearty welcome from students and physicians; and the revision, with many chapters entirely rewritten because of the advancement made in the work covered by them, has been well done.

No physician can keep up with the progress of medicine who is not giving a good deal of study to chemistry, and when a volume like Simon's puts so much valuable information within reasonable, if we may not say easy, reach of every practitioner, there is no excuse for the man who does not know some chemistry.

HAND-BOOK OF THE ANATOMY AND DISEASES OF THE EYE AND EAR. For students and practitioners. By D. B. St. John Roosa, M. D., LL. D., Professor of Diseases of the Eye and Ear in the New York Post-graduate Medical School; formerly President of the New York Academy of Medicine, Etc., and A. Edward Davis, A. M., M. D., Professor of Diseases of the Eye in the New York Post-graduate Medical School; Fellow of the New York Academy of Medicine. 300 pages, square, 12mo. Price, extra cloth, $1.00, net. F. A. Davis Company.

Drs. Roosa and Davis are in a position to know the wants of students, undergraduate and post-graduate; and they have given the profession a valuable book within the limitations set by them for their work. The book is designed for students attending clinics, and it is certainly a well edited manual of the kind.

ARTERIA UTERINA OVARICA. The Utero-ovarian Artery and the Genital Vascular Circle. By Byron Robinson, B. S., M. D. Price, $1.00. Chicago: E. H. Colgrove.

Dr. Robinson is an indefatigable student. He is not a great writer, but he has treated his subject in a manner to meet the needs of students who want things made very plain. He is a clear writer, and with the use of over one hundred plates he has given us a valuable monograph.

MAGEE AND JOHNSON'S EPITOME OF SURGERY. A Manual for Students and Practitioners. By M. D'Arcy Magee, A. M., M. D., Demonstrator of Surgery and Lecturer on Minor Surgery; and Wallace Johnson, Ph. D., M. D., Demonstrator of Pathology and Bacteriology in Georgetown University Medical School, Washington, D. C. In one 12mo volume of 295 pages, with 129 engravings. Cloth, $1.00, net. Philadelphia and New York: Lea Brothers & Co.

This small volume is one of Lea's Series of Medical Epitomes. Like all condensations, it barely escapes the danger of leaving out much that is valuable; yet we think the volume an excellent one, and is particularly adapted to refresh one's memory on the essential points in surgery, either for preparation for an examination or to keep the general practitioner fairly well posted in work that may fall to his lot at any moment.

Progressive Medicine. Edited by Hobart Amory Hare, M. D. assisted by H. R. M. Landis, M. D. Vol. III, September, 1904. Quarterly, Price, $6.00. Philadelphia and New York: Lea Brothers & Co.

Dr. Ewart edits the first 100 pages of the current volume, treating the diseases of the thorax and its viscera. Dr. Gottheil follows with fifty pages on dermatology and syphilis. Dr. Spiller has fifty pages on the nervous system. Dr. Norris has forty pages on obstetrics. Better summaries of the work done in lines indicated are not to be found anywhere.

NEWS ITEMS

Dr. Carroll Corson, of Vining, has moved to Wadena.

Dr. H. S. Fairall, of Superior, Wis., has located at Deer River.

Dr. M. S. Keyes, of Canada, has begun practice in Mohall, N. D.

Dr. P. J. Gallagher, State University, '04, of Graceville, has gone west with a view of locating.

Dr. C. E. Daniels, of Millbank, S. D., who recently moved to California, died suddenly while on a visit to Millbank.

Drs. McMichaël and Jacoby, of Vernon Center, have formed a partnership. Dr. Jacoby formerly practiced at Lake Crystal.

Dr. T. M. Stotts, of Hot Springs, Arkansas, has succeeded Dr. W. E. Casey as resident physician at Pipestone Springs, Montana.

Dr. G. Biornstad, of St. Paul, has located at Albert Lea. Dr. Biornstad has just returned from a year's special work in Europe.

Dr. C. E. McReynolds, of Underwood, N. D., and Miss Elizabeth Clark, of Bismarck, N. D., were married last week at the latter place.

Dr. J. L. Livingstone, of Pelican Rapids, has decided to locate elsewhere. His practice will be taken by Dr. Geo. H. Norris, of Clearwater.

Dr. C. W. Kanne, of Arlington, has returned from a six months' trip abroad ,where he went to do post-graduate work in surgery and in diseases of women and children.

Mercy Hospital of Webster City, S. D., has been closed, and will no longer be conducted as a private institution. It has been offered to the city for a public hospital.

Dr. Alexander Campbell, a brother of Dr. R. D. Campbell, of Grand Forks, N. D., has been appointed superintendent of the Winnipeg General Hospital. There were thirty-five applicants for the position.

The daily press of Wisconsin says that Dr. L. P. L. Gaillardet has been driven out of Hurley by a boycott caused by his exposure of the political and moral rottenness of that place. He has located at Chippewa Falls, Wis.

The Interurban (Duluth and Superior) Academy of Medicine held its annual session in Duluth last month, and elected the following officers for the coming year: President, Dr. Homer Collins, Duluth; vice-president, Dr. L. A. Potter, Superior; secretary and treasurer, Dr. W. A. Coventry, Duluth.

HENNEPIN COUNTY GRADUATE NURSES' ASSOCIATION

During the past year the members of the Hennepin County Graduate Nurses' Association have been active in strengthening their organization, having increased their membership more than half, and the work generally has been centralized.

The first aim of the organization is to combine the efforts of the nurses in maintaining the highest standard, and thus be able to supply the necessary assistance to the medical profession in the care of the sick. It is also the aim of the Association to work for state and national registration.

For the convenience of physicians, nurses, and the public, a registry is conducted where reliable nurses can be called at any hour. This registry is under the supervision of Dr. Marion A. Mead, whose experience as superintendent of the Northwestern Hospital Training School for Nurses makes her specially capable in managing this work, and the Association is favored in obtaining Dr. Mead as Registrar.

In connection with this work Dr. Mead is maintaining a nurses' club at her residence, 1502 Third Ave. S., which has met with success. The demand for home life at headquarters is so great that another year will warrant enlarging the plan.

The Registry is connected with telephone service (both phones, No. 2558), and it is hoped that every physician in Minneapolis will call for nurses through this registry. Out-of-town calls will receive careful attention.

POST-GRADUATE WORK

Doctor: If you want practical post-graduate work during fine season in the delightful city, write for particulars. New Orleans Polyclinic, P. O. Box 797, New Orleans.

NORTHWESTERN LANCET

A Semimonthly Medical Journal

VOL. XXIV DECEMBER 15, 1904 No. 24

THE SURGICAL TREATMENT OF PANCREATITIS*

ARTHUR T. MANN, M. D.

Instructor in Surgery, University of Minnesota; Associate Surgeon to Northwestern Hospital; Etc.

MINNEAPOLIS

For the purposes of treatment we have acute, subacute, and chronic pancreatitis, a classification which does not interfere with the pathological divisions.

The diagnosis of all the forms is difficult and often impossible, but it is being made in an increasing number of cases.

Acute pancreatitis with its sudden pain, collapse, vomiting, marked epigastric tenderness, and constipation, is usually mistaken for intestinal obstruction, or an epigastric peritonitis due to perforation of the stomach, gall-bladder, or duodenum, all of which conditions demand operation. A severe acute pancreatitis itself is a terribly fatal disease, and leads to death in a few hours, or, at most, in a few days, and as operation offers the only hope, the duties of the surgeon are very much simplified if the symptoms are severe enough to make an approach to a diagnosis possible. Some of the milder cases undoubtedly recover without surgical interference. Nearly every case gives a history of previous similar attacks of a mild grade. Small scars have been found in an abdomen opened for another cause, which might well have been healed areas of fat necrosis; and an occasional case reported cured has been opened, a diagnosis made, and the abdomen closed without further interference.

The reason for operation in the acute form lies in the fact that the pathological changes after the onset of the disease do not tend to become self-limited. This is shown both by post-mortems, and clinically on the operating table. The cases rapidly run on to necrosis, to suppuration, or to both combined. It seems that an early operation, which would relieve the tension of retained hemorrhage, and afford an exit for retained secretions, which tend to a self-digestion of the gland, and drainage for fluids which are becoming septic, should be a rational procedure.

The pancreas may be reached by an incision in or near the median line by going through the gastro-hepatic ligament above the stomach, through the omentum between the stomach and transverse colon, and through the mesentery of the transverse colon below the colon. The route between the stomach and the colon is the one usually selected.

At the operation areas of fat necrosis aid very materially in making the diagnosis of pancreatitis. Gall-stones and stone in the pancreas should be looked for as a cause of the condition, but the surgeon will remember that the patient cannot, as a rule, stand a prolonged operation. The immediate condition of the pancreas may be all that he can treat at this time. With hemorrhage, without noticeable destruction of the gland, the capsule may be incised a distance sufficient to cover the area of the hemorrhage. If the hemorrhage is active, gauze packing, as a rule, has been sufficient to stop it. Drainage should be established up through the abdominal wound, while the rest of the abdomen is carefully walled off by gauze or by suture of the gastrocolic omentum to the peritoneum of the abdominal wall. If there is much necrosis and debris, it will be found best to make a counter-opening in the back at the left costovertebral angle.

---

*Read before the Hennepin County Medical Society, November 5, 1894, in a symposium on pancreatitis.

If the case runs into the subacute type, it means that the symptoms are similar to those in the acute type but are less severe, and, instead of terminating in death in a few hours or a few days, the case runs on for a few weeks, but, with very rare exceptions, if left alone, it runs on to certain death. More or less of the pancreas may become necrotic, or suppuration may intervene with or without necrosis of the pancreas.

In case of simple necrosis, it has not seemed feasible to remove the necrotic tissues. Instead of this the practice is to open down to the pancreas, and drain. In cases running on to suppuration the pus is found distributed in various ways. The pus foci may be small, and still inside the limits of the pancreas or the peri-pancreatic tissue. It may break into the lesser peritoneal sac and become a localized abscess by closure of the foramen of Winslow, or become a general peritonitis by leaking through the foramen or by breaking through at any point; and it may burrow widely in the retroperitoneal tissues. It burrows to the left, as a rule, though it may burrow to the right, especially if it starts from the head of the pancreas. In these cases it tends to form a perirenal abscess. It may form a subdiaphragmatic abscess. It also has a strong tendency to follow along the psoas muscle downwards toward the brim of the pelvis, and it has been found even in the pelvis, forming an abscess at the back of the broad ligament.

In operating on these cases, if the necrosis or the pus collection is small, anterior drainage may be sufficient. However, extensive necrosis or the larger collections of pus require a posterior opening and drainage in the most dependent portion. Gall-stones and pancreatic stones should not be overlooked.

The treatment of chronic pancreatitis has become fixed since the publication of Mayo Robson's article in 1900. He reported seventeen cases operated by cholecystotomy and sixteen cases cured. In operating on a patient almost in extremis, who had had jaundice for a long time, he found no gall-stones, but the head of the pancreas was thickened and indurated, and, supposing the obstruction to be due to a cancer here, he opened and drained the gall-bladder. The patient died. Autopsy revealed chronic interstitial pancreatitis with the enlarged head of the pancreas constricting the common bile duct. From this case he was led to believe that cholecystotomy would be beneficial in earlier stages of chronic pancreatitis, and his results from such procedure have been brilliant.

After the publication of Robson's results many other surgeons began to go over their records of cases operated on for obstruction of the common duct, where no gall-stones were found. Cancer of the head of the pancreas was the most common diagnosis made. Where the gall-bladder was drained to relieve back pressure on the bile ducts, many of the cases recovered. These cases of recovery must have been cases of chronic pancreatitis. Encouraged by these results the surgeons have been making the diagnosis of chronic pancreatitis in an increasing number of these cases during the last four years.

While the diagnosis is exceedingly difficult to make, and, as a rule, is only made during an operation on supposed gall-stones or during an exploration for symptoms resembling cancer of the head of the pancreas, still there are some symptoms which under close study may throw light on the situation, and lead to an earlier diagnosis. The onset, as shown in the cases, may be quite gradual and painless at first, but usually it starts in with sudden and severe pain in the epigastrium, followed by jaundice, nausea, and vomiting, and runs on into the typical picture of a gall-stone attack. The pain, however, is not over the gall-bladder, and does not pass around to the right side, except rarely, but it is central, running backward to the midscapular region or around to the left. While the gall-bladder is usually enlarged it is not tender as in gall-stones. The tender spot is in the middle line above the umbilicus over the pancreas. Jaundice, when once it comes, tends to deepen with each attack, and to become chronic. A swelling of the pancreas may sometimes be made out, but on account of the rigidity of the epigastrium, due to pain and tenderness, it can be made out, as a rule, only under an anesthetic. Loss of flesh and strength is well marked in all cases, but is less rapid and less well marked than in cancer. The stools may be fatty, but the absence of noticeable fat is of no significance. Ascites tends to occur with cancer, and not with chronic pancreatitis. In the abdomen adhesions are common with pancreatitis, and very rare with cancer. If the retroperitoneal lymph glands are enlarged they are soft and discrete with pancreatitis, and they tend to become hard and massed with cancer.

As to the operation of draining the gall-bladder in cases of chronic pancreatitis, cholecystotomy and external drainage is the common procedure. Cholecystenterostomy with anastomosis of the gall-bladder with the transverse colon or with the duodenum, has been done. It avoids the external drainage of the gall-bladder, which is sometimes of long duration and exceedingly annoying to the patient. The anastomosis with the transverse colon is the easier operation, and gives as satisfactory results as an anastomosis with the duodenum.

What this drainage of the gall-bladder does for the pancreatitis must be accomplished by the relief of bile pressure low in the duct, which has been tending to force it into the pancreas, and by drainage of the obstructed pancreatic secretions with the irritants which they may contain, and in this way giving a relief to the pancreatic inflammation which then runs on to recovery.

DIPHTHERIA*

By C. F. Osgood, M. D.

MORGAN, UTAH

Definition.—Diphtheria is a local, specific, infectious, and contagious disease, sporadic and epidemic, occurring most frequently in children and characterized by moderate fever, sore throat, and the development on the fauces of a greyish-white false membrane, with a tendency to extend to the larynx and trachea. The subsequent symptoms result from laryngeal stenosis or absorption of toxins.

Etiology.—In regard to etiology and treatment, probably none of the infectious or contagious diseases have been so thoroughly worked out, and placed on so scientific a basis. It is practically an unquestioned fact to-day, that the specific cause is the Klebs-Löffler bacillus. Researches show conclusively that it is a local, specific, contagious disease, and never arises spontaneously. Horses, cows, and especially dogs and cats are subject to the disease, and are often the source of its transmission. Milk has also frequently been proven to carry the infection. The area of infection is evidently not so great as that of scarlet fever, and differs somewhat with the locality affected, but that it is distinctly contagious cannot be doubted, the infected nasal and pharyngeal cavities, probably being most conducive to its wider dissemination.

Prophylaxis.—This includes isolation, disinfection, and immunization, and is of the greatest importance. We should require the isolation of every case of doubtful sore throat and every case of profuse irritating nasal discharge until by cultural and bacteriological examination, a positive diagnosis can be established.

The patient should be placed in a thoroughly ventilated and sun-lighted room which is as devoid of furnishings as practicable. Esmarch has demonstrated that diphtheria bacilli on a cotton cloth or in a culture tube, will be killed on being exposed to strong sun-light from four to five hours. All utensils should be sterilized by boiling water. The physician should wear a cotton gown when entering the room, which can be laid aside on retiring, always being careful to immediately disinfect the hands in a solution of bichloride, 1 to 500, or some other germicide of proven efficiency. The common practice among the laity of burning sulphur in the room with the patient, is effective of no good, is most annoying to both patient and attendant, and should not be allowed. The time-honored method of disinfection by sulphurous acid gas, as usually employed, has been proven by McCollum of Boston to be ineffective and dangerous in that it gives a false sense of security. The most practicable safe methods of disinfection are boiling one hour, steam under sufficient pressure to make it penetrative, and generation of formaldehyde vapor, which, in recent years has been shown to be a disinfectant of considerable value.

---

*Delivered at the Utah State Medical Association, Ogden, Utah, May 10 and 11, 1904.

IMMUNIZATION.—As a prophylactic immunization is equally, if not more, important than isolation or disinfection, but, unfortunately, is not practiced so generally by the profession. This is likely due to two causes: first, the cost of antitoxin, second, the prevalent opinion among our patients that antitoxin is more or less harmful. It remains with the manufacturers to eliminate the first cause, and the physician, by properly educating the laity, can largely influence the second.

The positive effects of antitoxin as an immunizing agent can no longer be reasonably doubted. It is my practice to use from 250 to 1,000 units as an immunizing dose, and in a limited experience of twenty-one cases, injected under various conditions of exposure, I have yet to see one having any deleterious effects, or one to contract the disease within three weeks of the time of injection.

The symptoms usually begin from two to three days after exposure, but there are frequent exceptions. It is not uncommon to see the active symptoms begin as late as two or even three weeks after the initial exposure. The first intimation is usually a chill or chilliness, general malaise, and in children vomiting, and occasionally convulsions. After a few hours' dryness or soreness of the throat with a swollen, dark hue of the mucous membrane, which may be covered with spots or patches of false membrane of a greyish-white color. The spots may develop, forming a large patch of membrane, extending into the nasopharynx, or downward into the larynx, or in milder cases the spots fail to coalesce, persist for a day or so, and then disappear.

Frequently the signs and symptoms are confined to the nose and nasopharynx. There is a dry, crusty sensation, accompanied by burning on the upper surface of the palate, extending into one or both nares, swelling of the turbinals, obstructing nasal respiration, and producing a dirty, excoriating discharge from the nose. There may or may not be the formation of false membrane.

This diphtheritic rhinitis, I believe, is more common than generally supposed, especially the milder non-membranous forms. In my records of 117 cases in private practice, 14, or more than 11 per cent, showed no especial pharyngeal or laryngeal symptoms, the disease being almost entirely confined to the nose; while I distinctly remember numerous other cases in families who had one member with positive pharyngeal and laryngeal diphtheria, and with one or more other children with more or less nasal obstruction with a profuse dirty discharge—cases which were mild in character, but undoubtedly diphtheritic.

Again, the symptoms may be entirely limited to the larynx and trachea, there being little or no malaise, sore throat, or rise of temperature, the first symptoms being hoarseness, aphonia, croup and stridulous respiration. Out of seven cases on whom I performed tracheotomy to relieve desperate larygneal stenosis, three were distinctly of this type, there being no history of any sickness or previous sore throat, yet after the administration of antitoxin there were large leathery pieces of false membrane expelled through the tracheal opening.

Rarely, the eye is the primary site of infection. This occurred in two of my cases, one an infant of three weeks, it having been born into a family under quarantine for the disease, one member of which had died from laryngeal stenosis. There was false membrane on the conjunctivæ of both eyes, and about five days later the nose, pharynx, and larynx became involved and the child died, no antitoxin having been used. The other case was a man 47 years old, in whose family there had recently been seven cases of quite severe diphtheria. He came into my office complaining of an intense burning pain in the left eye, stating that he had gotten something in it the night before. Examination showed profuse lacrymation, an edematous conjunctiva of a dusky-red hue, but no foreign substance. A boric acid solution was used for two or three days with no apparent improvement, when, on the fourth day, he became aphonic, and laryngoscopic examination revealed a dusky-red edematous epiglottis and cords, but no membrane. An initial dose of 4,000 units of antitoxin was given, and in twenty-four hours the condition of both larynx and eye had much improved. Not until then did it occur to me that the conjunctivitis was diphtheritic.

Probably none of the infectious diseases are followed by such a variety of sequelæ, the nervous system, the heart, and the kidneys being most susceptible to its toxin. Out of my 117 cases 7 showed some form of paralysis. Five were limited to the pharyngeal and palatal muscles, fluids being regurgitated through the nose.

In one case the sphincter of the left eye, the muscles of the pharynx, and the flexors of both feet were involved for nearly three months before there was complete restoration of function. In the other case, a woman in her sixtieth year, in whom there was a pharyngeal and intestinal paresis, there was regurgitation of liquids through the nose, obstinate constipation, and marked tympanites persisting for nearly two months.

The heart showed signs of being affected in 22 per cent, two cases succumbing to cardiac paralysis, twenty having arhythmic tachycardia, without murmurs and persisting from two weeks to four months. Two had arhythmic tachycardia, dilatation, and mitral murmurs.

Seven cases showed albuminuria, two terminating in a fatal nephritis, one in nine, and the other eleven, weeks subsequent to the initial sore throat. In both of these cases the throat symptoms were very mild, and no antitoxin was given. No doubt a much larger percentage would have revealed an albuminuria had the urine in all cases been tested, it having been examined only in cases showing signs of kidney involvement.

Without the aid of culture media and the microscope, the diagnosis of this protean disease is by no means always so easy a matter as our patients would sometimes have us believe. Experience in a country practice has taught me that their view is that those who die are diphtheritic, and the ones who recover have tonsillitis, or a bad cold.

The milder the epidemic, the greater the difficulties the physician meets in making a diagnosis. In general I have tried to educate my patients to the fact that there is practically but one contagious sore throat not accompanied by an eruption; that the terms membranous croup and membranous sore throat are misnomers, and such cases in reality are diphtheritic. The fact that an occasional case of so-called membranous sore throat failed to reveal diphtheria bacilli on cultures and that such cases showed little tendency toward contagion, has made many doubt that these were true diphtheria. The fault, no doubt, has been in the technic, and not in the fact the bacilli were not present in the case.

It has been repeatedly demonstrated that cultures taken from the mouth and pharynx of these laryngeal and tracheal cases have failed to show diphtheria bacilli, when later cultures made from the intubation or tracheotomy tube revealed them in large numbers.

Since the cause of the disease has been established beyond a doubt, and the ease and readiness with which we can supply ourselves with culture media, we should not long remain in doubt, even in obscure cases. In taking the culture the swab or platinum needle should come into contact with the under surface of the false membrane, where the bacilli are most numerous, The sanious discharge in nasal cases is invariably loaded with bacillli. It is well to take two cultures, one from the site infected and the other from the secretions of the mouth. It is claimed by McCollum that pseudo-diphtheria bacilli, of which so much has been written, do not occur with sufficient frequency to interfere with the diagnosis, and even they may be differentiated by certain cultural peculiarities.

The prognosis, even in mild cases, should always be guarded. Since the advent of antitoxin the mortality has been reduced from 50 to 57 per cent. In my own series of 117 there were 10 deaths,5 being cases on whom tracheotomy had been performed. One of these five died from extension of the disease into the trachea and bronchi; one from general toxemia and cardiac paralysis; one from dislodging the tracheal tube and strangulation; and two from septic pneumonia, one of them succumbing thirteen days after the tracheotomy. Of the other five cases, two were due to nephritis, two to asphyxiation, and one to general toxemia.

Five of these cases had no antitoxin. One of them had received 27,000 units. The total mortality was a trifle more than 8 per cent, and I am of the opinion this could have been reduced at least 50 per cent had treatment been instituted earlier.

The treatment, generally speaking, should be supportive and specific. The amount of alcohol a person will take with apparent benefit in a severe attack is surprisingly large. Digitalis and strychnine are the mainstays where there are signs of cardiac weakness. The specific and most important treatment, however, is antitoxin. It should be given early in liberal doses. In no case should it be neglected on account of a lack of severity of symptoms. I believe many of the sequelæ would be prevented should we make this our governing rule. The curative action of antitoxin has not been satisfactorily explained, but from numerous experiments it has been shown that unless sufficient antitoxin units have been given to neutralize the diphtheria toxin, the results are unfavorable; hence the great importance of giving it early, both from an economic and curative standpoint. As there is no method by which the amount of toxin in the system can be definitely ascertained, it is best to give a large dose, from 2,000 to 4,000 units, being governed by the length of time the patient has been sick, and the severity of the case. If in from eight to twelve hours there is no decided improvement, double the initial dose should be continued every eight hours until the desired results are obtained. No doubt, many lives have been sacrificed since the days of antitoxic treatment, by its timid and insufficient administration. I am satisfied that this was so in two cases in my early experience with antitoxin. Within the last year I gave one of my patients 30,000 units within thirty hours, and there are many cases on record that have taken from 50,000 to 80,000 with no apparent ill effects. The only unpleasant results that I have ever seen which could be attributed to antitoxin, were urticaria and a local erythema. Some authorities claim to have seen ecchymotic and scarlatinal forms of eruptions, but it is likely these were due to some infection or an individual idiosyncrasy of the patient. In my own experience there have been seven cases of local erythemas I attributed to slight infection from the hypodermic needle. Since using the glass containers as syringes I have had no cases of erythema.

For an antiseptic gargle, alcohol diluted, 1 to 3 or 4, is quite beneficial. If dysphagia is marked, spraying the throat with a 1 per cent solution of cocaine allows food and stimulants to be taken without much discomfort.

In laryngeal stenosis, characterized by stridor, great restlessness, and cyanosis we must depend for relief upon one of two operations, intubation or tracheotomy. If the patient is in a hospital or where he can be seen readily, intubation would be preferable. The points in favor of intubation are that you can more readily get the consent of parents, there are fewer deaths from pneumonia, and no external granulating wound after the disease has subsided. The arguments against this procedure are that it requires greater skill and a special set of instruments, that there is danger of crowding a detached piece of membrane into the trachea resulting in death, also traumatic injuries to larynx and cords, the lodgement of membrane and secretions in the tube, and, last but not least, the coughing up of the tube and strangulation where the physician cannot be in constant attendance.

Preparations for a tracheotomy should always be made before attempting the intubation, so that in case the tube does not afford relief or if detached membrane is lodged in the trachea, the tracheal operation can be done. In country practice, where it is impossible to be constantly with the patient, I would favor, in the majority of cases, the tracheotomy. Most any attendant can be instructed in regard to removing the inner tube, which almost invariably must be done occasionally, in both operations.

If care is exercised in preventing the tracheal secretions and blood from being drawn into the lungs, and the atmosphere kept warm and moist, the number of cases of pneumonia will no doubt be reduced considerably. When incising the trachea, great care should be exercised to make the opening in the median line, otherwise there will be not a little annoyance in inserting the tube. The best position is to have the neck fully extended, with the head lower than the chest, but when inserting the tube, the head should be slightly flexed in order to restore the normal rotundity of the trachea. This is especially important in children, where the tracheal cartilages are elastic, and can be stretched into practically a band.

The administration of food is an important factor in the treatment of these cases, and while sufficient nourishment should be given, yet care should be taken that the strength of the patient be not exhausted by too frequent feeding.

DISCUSSION

Dr. L. W. Snow: I hardly feel competent to discuss this paper, as I see very few of the cases, excepting the point in regard to tracheotomy and intubation. Personally, with the cases we have had in the city I prefer intubation in the great majority of cases. Of course in country districts, where, as the doctor states, the cases cannot be watched closely by the physician, I think there would be advantages in tracheotomy. Intubation can be done comparatively easily and with apparatus which is not very expensive.

Dr. S. G. Eghian: Out of 169 operative cases, 92 were intubation and 42 were tracheotomy. Out of the 92 cases of intubation, in 53 cases the tube was coughed up, three times the tube was swallowed, five times the child himself took it out, having his hands loose, and in 25 or 26 cases the tube became filled with membrane, and had to be taken out. It showed that the intubation is not fit at all for country practice. On the Continent they do not use intubation at all outside of the hospitals, because it is absolutely necessary for a competent man to take out the tube and put it in again. Dr. Osgood reported that 50,000 units of antitoxin can be used. The general doses are 5,500 or 30,000, and the mortality before the injection of the serum in the hospital was 25 per cent. Not more than 30,000 units are applied. I have had ten or fifteen cases in my experience in this country, and I have ordinarily used 1,500 units. I think an initial dose of 3,000 or 5,000 units is too much.

Dr. F. W. Taylor: I wish to compliment Dr. Osgood on the fine paper he has presented to us. In Utah county we believe a great deal in prophylaxis, and at some trouble and expense the physicians of the county have given lectures to the school boards, trustees, teachers, and janitors, and have instructed these people upon the methods of infection. We have come to the conclusion that the greatest source of infection for diphtheria, and of all the contagious diseases, is the school-house, meeting-house, etc.; but the school-house being used five days in the week we consider as being the focal point, and we have taken a little trouble to instruct the boards of education and teachers as to the proper methods. It has been the custom for some three or four years to have the janitors use sawdust that is saturated with bichlorid solution to go over the floors and sweep with, instead of sweeping the dust and causing this dust to rise all over the furniture. Instead of using the old time feather duster, they use a cloth that is dampened in the bichlorid, and we are happy to say that our diphtheria and contagious diseases have almost disappeared. In relation to the disinfection of the premises after diphtheria has been in the place, I will say we have experimented some and have used the best information we could obtain. I disagree somewhat with Dr. Osgood in the use of formaldehyde and sulphur. We had been using the formaldehyde rather steadily, when we had a report from Washington in which the comparative results of sulphur and formaldehyde disinfection were given, and the statement was certainly in favor of the sulphur where moisture was used with the sulphur. We have with us, of course, a great many poor people. We make them clean thoroughly with the bichlorid solution, and after that, in a great majority of cases, we have filled the apartment with steam, and then burned a large quantity of sulphur. We find this very effective, and no cases have recurred under such treatment. In relation to the large doses of antitoxin and the relation it bears to intubation, I would like to call Dr. Osgood's attention to one fact. He states that every one does not possess an intubation set. The doctor seems to have no hesitation in compelling people to pay for from 1,000 to 50,000 units of antitoxin, at a cost of from $2.00 to $100.00, and evidently has neglected to provide himself with a set of instruments costing probably $15.00 to $30.00. The plan we have adopted in our community is this: Each of the physicians in the city has stood, pro rata, the cost of the best set that we could obtain, and that is placed in a prominent drug store and we all have access to that, day or night. In a case of diphtheria that needs intubation, the set is obtained, and the intubation promptly made. What use we have made of the intubation set in our limited experience has been certainly very flattering, and the results have been excellent. I cannot understand from Dr. Eghian's remarks how the child could get the tube from its mouth by the string. In our practice we leave no string. The only way the child could get the tube from its mouth would be by coughing. In my practice I have had two very interesting cases lately, with strabismus following diphtheria and accompanied usually by loss of voice and general muscular paralysis. They have recovered after a few days' treatment with arsenic and iron tonics.

Dr. J. F. Noyes: As others have stated, I am much pleased with the paper. I wish to say a word in regard to the administration of antitoxin. I believe we cannot make it stick unless we give large doses at first. I have had extended experience in the treatment of diphtheria, and I have not lost a case where I have given large doses of antitoxin, and I do not hesitate to give 3,000 units as an initial dose. According to the theory of the antitoxin, it is not a dangerous drug. If it is good for anything, we should use it heroically, because we cannot trifle much with diphtheria, and the quicker we get the upper hand of it the better it will be for us. I have given on two or three different occasions as high as 27,000 or 30,000 units, and I do not know of a single case in which the health has been affected from the administration of the antitoxin.

As to disinfecting houses: I am certainly in favor of the formaldehyde disinfection, if we use enough of it. I am confident that directions that are sent out with the machines made for disinfection, advising the use of about six ounces to 1,000 cubic feet of air, are not sufficient. I believe that formaldehyde is better than sulphur, if you use plenty of it. I generally use nearly one pint per 1,000 cubic feet of air.

Dr. George E. Robinson: I will detain the assembly for only two or three minutes. I want to go on record regarding surgical operations in laryngeal cases of diphtheria. I have performed tracheotomy two times; both patients died. I have seen it performed six times by others, and all died. I will not go into the details of the cases. Of course they died, some quickly, others due to general toxemia, septic pneumonia, etc. In the few cases of intubation they have all recovered, both in my hands and in the hands of my associates. Of course antitoxin was administered in connection with it, and I do not see why it would be more of a disadvantage to intubate in the country than it would be in the city. I believe more cases of suffocation result from tracheotomy than from intubation. I think that usually intubation is the better operation.

Dr. M. H. Hardy: Dr. Hardy inquired whether the opinion is practically unanimous that diphtheria and membranous croup are one and the same thing, to which Dr. Osgood replied in the affirmative. Dr. Hardy then further made the following inquiries: Is it unanimous that diphtheria is a local disease, or is it a constitutional disease with local manifestations, and is it practically unanimous that we can give names to the disease usually manifesting itself on the tonsils as tonsilar diphtheria, and then when this membranous condition has left the tonsils and invaded the larynx, may we say "laryngeal diphtheria," etc? May we use the term intestinal diphtheria and must we depend upon the membrane for our positive diagnosis, or must we depend for our diagnosis upon the examination which may be made? And is it possible that diphtheria can be a chronic disease?

Dr. C. F. Osgood (Essayist): First, in regard to the preference for intubation over tracheotomy: I fail to remember the exact number now, but in quite a number of cases it has been shown with intubation in children less than three years of age, that there has been a larger percentage of recoveries. We admit that intubation is the preferable operation, but sometimes it is impossible for one to do the intubation, not, as Dr. Taylor would have you suppose, because I have not gone to the expense of getting an intubation set, because I have done two intubations, and both were successful. Out of two intubations that I have done for diphtheria alone, both were successful; out of seven tracheotomies, two have recovered; but it must be taken into consideration that intubations are done at a much earlier stage than tracheotomy, and consequently they must be placed on a different basis. I think in two of those cases on which I performed tracheotomy, they were practically dead. Only in two was it necessary to give any form of anesthetic. There is one other thing that is quite important: As long as there is life, never give up; do intubation; do tracheotomy, and eventually you will reap some success. These cases are all fatal. None of them get well when they reach that stage, and if you save one out of ten it is better than allowing all to die.

In regard to the dose of antitoxin: As I stated in my paper, both from an economic and a curative standpoint, in my experience it has been the best to give a large initial dose, not less than 2,000 and from that to 4,000, according to the severity of the case.

In regard to disinfection: I have used sulphur for from six to nine years; the last two years I have been using formaldehyde. I do not think either of them is the best, but the formaldehyde in my experience has been the best available and the most practical. Experiments have been made with sulphur, which beyond any reasonable doubt show that the germs still remain in the carpet, bedding, etc.

STOMACH ANALYSIS AND ITS VALUE*

By Charles F. Coulter, M. D.

WADENA, MINN.

The technique of the analysis of the stomach contents is so easily acquired, and its value so apparent when completely carried out, that it should be in more general use by physicians. A chemical and microscopical analysis of the stomach contents gives not only facts for diagnosis, but a rational basis for treatment. There is nothing abstruse about the facts when obtained, and they lie within the reach of all of us. Any drugstore clerk, I do not mean pharmacist, who can put together a prescription for a little calomel and soda is capable of doing a stomach analysis. The proceeding needs absolutely no technical skill. A high-school student without medical intelligence who can drop one solution into another, can get results in stomach-contents examination.

The methods are simple, the apparatus easily obtained, and not elaborate. For the determination of HCl as carried out by Topfer's method, the one in general use, a burette, a 10cc. measuring pipette, 1 ounce each of the following acid indicators: 1 per cent solution of amidobenzol, sodium sulphonate, and phenolphthalein and 6 ounces of decinormal sodium hydrate sodium solution. It will be unnecessary to give the methods in detail, for they are all given in any good text-book on diagnosis. I venture to say that with familiarity one can do the routine tests as quickly as a complete urinalysis.

A careful consideration of the laboratory findings, together with clinical data, removes the therapeutics of gastric disorders from the mists of empiricism to the grounds of rational medicine. But it must be distinctly understood that a diagnosis cannot be made on the laboratory examination alone. There is a general idea that the greater part of the value of the examination of the stomach contents lies in the determination of the presence of free HCl. This is a mistake. The finding of free acid is only one of the many facts to be derived.

Before I speak of the examination proper, it becomes necessary to state a few facts in connection with the physiology of gastric digestion. Practically only the proteids or albumins of the food are acted upon in the stomach. At least this is true so far as a discussion of the value of stomach analysis goes. Digestion is carried on by means of HCl and two ferments, pepsin and rennin. These ferments are not secreted as pepsin and rennin but as their zymogens, pepsinogen and chymosinogen. For their further elaboration into active agents of digestion they must depend upon the presence of free HCl in the gastric contents. HCl is secreted as soon as the stimulus of food is felt in the stomach. It immediately combines with the proteids of the food to form syntonin or acid albumins.

---

*Read before the Upper Mississippi Valley Medical Society, at Wadena, Minn., October 14, 1904.

I wish to point out the fact that stomach analysis is invaluable in most of the office cases where the patient complains of dyspepsia, and where ordinarily some routine prescription is given and the case promptly forgotten; that its value is only exceeded by the ease of its performance; and that its interpretation goes away beyond the determination of the presence of free HCl, into the domain of quantitative stomach secretion, and influences not only the therapeutics but the prognosis as well.

This is as far as digestion goes until all the bases and albuminates are saturated, or, in other words, all the acid secreted becomes combined acid. As soon as saturation occurs HCl becomes free, and pepsinogen and chymosinogen are liberated as pepsin and rennin. The acid albuminates are now changed to albumoses, then to peptones, and then absorbed.

Now, at the height of digestion we will find the determination of the following of value: chemically, HCl, free, combined, or not at all; pepsin, peptones, the products of partially performed starch digestion, erythrodextin, and achroödextrin, bile, and lactic acid; microscopically, partly digested food particles, parasites (the only one of importance being the Boas-Oppler bacillus) blood cells, and, most significant of all, fragments of gastric mucous membrane.

By Topfer's method we determine the amount of total acidity, amount of free HCl, amount of combined acid, total amount of HCl, and the amount of acid salts. What information can be obtained from these estimations?

The normal total acidity may be considered the sum of the free and combined acid and any organic acids which may be present. It varies in normal cases from 40 to 60. Any increase above these figures indicates either a disturbance in secretion by stimulation or an overproduction of organic acids. This means the presence of an irritant, or the absence of free HCl by which the fermentation leading to the production of lactic acid is prevented. As irritants causing this increase in acidity may be mentioned, first, hyperemia; second, poor blood; third, disturbances of innervation. The hyperemia mentioned is due to secondary causes, such as heart lesions and hepatic cirrhosis. It does not apply to those changes in the gastric mucosa in which cloudy swelling results from congestive conditions.

In anemic states it is considered that while the blood carries the usual amount of chlorides from which the HCl is elaborated, it does not contain sufficient nutriment to keep the gastric walls beyond the influence of the ferments. An increase in acidity is usually transient, and the conditions which cause it soon lead to atrophic changes with a consequent decrease of the acidity. A decrease in the amount of total acidity can only be attributed to atrophied conditions or disturbances of innervation. It is in gastric atrophy that an estimation of acidity is of the most value; for in the absence of free HCl it becomes at once of importance for rational dietetic treatment to find if enough acid is being secreted to satisfy the chemical affinities of the albuminous foods. If no acid is being secreted at all, the stomach must be looked upon as a reservoir in which fermentative processes leading to the production of lactic, butyric, and acetic acids may go on without reserve. In this condition such foods must be given as will be subjected to pancreatic digestion as soon as possible. Gastric catarrh in its chronic form is the most frequent cause of diminished acidity. Again, a lessened acidity may occur in emotional conditions, such as hysteria and neurasthenia. As an example of nervous anacidity Ewald speaks of a sea voyage taken by himself in which no acid could be found in the vomit.

If total acidity is normal, and the total amount of HCl is low, it can only mean the presence of organic acids introduced with the test-meal or produced by fermentation. In such an event lactic acid will probably be found in considerable amounts.

The significance of free HCl has been a debated question since 1842, when it was investigated by Golding Bird, of London. For a long time the absence of free HCl has been held pathognomonic of gastric cancer, but many exceptions were found to this rule. If there is no HCl secreted at all of course we shall find no free HCl. On the other hand, if HCl is found combined, and no free HCl is present, it simply means that not enough acid is being secreted to satisfy the albuminous affinities. This can be accounted for only by the presence of atrophy of the mucosa. It seems, then, that free HCl is an indicator of the fluctuating ability of the stomach's acid-secreting apparatus, and can be likened to the steam at the safety-valve of a boiler, which appears only when the pressure in the boiler reaches the limits of safety. Ewald says "that the absence of free acid may be regarded as a quite characteristic but not invariable symptom of gastric cancer. It is quite evident that when the growth is limited to a circumscribed area during the more irritative stage of the disease, and when the accompanying catarrh is slight, with no atrophy, the secretion of acid may be up to normal, and only disappear late with the appearance of cancerous cachexia." This fact is proven in a case of Ewald's which had normal acid up to a few days before death. The presence of cancer was demonstrated at autopsy. The mucous membrane surrounding the diseased area was found normal in practically every respect. "The case shows that with a localized cancer and an intact membrane the secretion of acid may continue normally up to a short time before death, and under such circumstances conclusions based upon the demonstration of free acid may be erroneous." It has been further agreed by practically all writers that cases of cancer engrafted upon an ulcer base show the presence of free acid after a test-meal. When, then, a case presents itself with the prominent symptoms of ulcer and normal acid which cannot be improved by three weeks appropriate treatment, it may be concluded that it is a case of cancer with an ulcer for a base.

Ewald comes to the conclusion "that the absence of free acid in cancer of the stomach has no significance as such, but has only the value of a secondary symptom." However, granting that the free acid may disappear in gastric atrophy and allied conditions it is still true that the demonstration of the presence of free acid goes a long way in proving the absence of cancer of the stomach. Also the important fact remains that free HCl is absent usually in gastric cancer. Of Osler and McCrae's series of cancer of the stomach 80 out of 87 in which an examination of the stomach contents was made, showed the absence of free HCl. In 40 cases of gastric cancer Boas found an absence of free acid in 35.

The presence of lactic acid in the contents after a test-meal has almost the same value as the absence of free HCl. This does not seem a fact of much importance when we consider that only in the absence of free HCl will fermentation occur with consequent formation of lactic and other organic acids. But it is known that, notwithstanding stagnation of gastric contents and the absence of free HCl, lactic acid is not necessarily formed. It is only in cancer of the stomach that lactic acid is produced in notable quantities. Lactic acid may also be found in complete glandular atrophy, but this condition is rare. In an analysis of 14 cases of cancer, Boas was able to demonstrate appreciable amounts of lactic acid in all but one.

In the determination of pepsin we have a valuable means of differentiating neuroses and abnormalities of circulation from gastric catarrhs; for no matter how great the variation in acidity in gastric neuroses, which is their chief distinguishing characteristic, the amount of pepsin remains constant. In general, if HCl is present the presence of pepsin may be inferred. For the determination of pepsin place a flake of pepsin in each of three test-tubes. Into the first of these put 10cc. gastric filtrate. In the second put, in addition to the 10cc. of filtrate, 3 drops of dilute HCl. Use the third tube as a control-tube, placing in it 3 drops of dilute HCl and 3 grains of pepsin. Put them all in a basin of water kept at 100° F. for three hours. If digestion occurs in the tube to which filtrate alone has been added, the case is normal; if only in the tube to which acid has been added, then HCl is deficient or absent in the gastric juice. But if digestion occurs in neither of the tubes then the absence of both HCl and pepsin may be inferred, and the treatment be directed accordingly. Much criticism has been made of digestion in the test-tube, but the above experiment amounts to a demonstration of the gastric ability or inability for performing digestion.

In the microscopical examination, the finding of certain bacteria and fragments of mucous membrane has a great deal of importance. The Boas-Oppler bacillus, a long, non-motile, organism, characterized by its great length and its tendency to form long threads, has attracted considerable attention. It appears to be quite constantly present in cancer, and absent in other diseases.

Its presence may account for the occurrence of lactic acid in cancer of the stomach.

Sarcinæ are usually present in atrophy and stagnation of the stomach contents. Their presence indicates fermentation. They are practically never seen in cancer.

It frequently happens that fragments of mucous membrane are brought up by the stomach-tube. If cancer is present a positive diagnosis can be arrived at by the appearance of these shreds. Cancer cells are distinguished by mitosis, or the process of active cell division. Their appearance is pathognomonic of cancer. If no cancer is present an appearance indicative of varying degrees of the atrophy found in catarrhs and neuroses is presented.

Ewald mentions two cases to show the value of stomach-contents examination:

CASE 1.—On November 24th, a colleague, Dr. X——, sent to me Mrs. W——, 33 years old, a small, emaciated woman who had borne four children. She complained of almost continuous pains, day and night, in the epigastrium. The pains were independent of eating, had lasted more than six months, and were temporarily relieved by the use of Carlsbad water. The patient belched frequently, but had a good appetite, and had never vomited.

The tongue was not coated; the abdomen was somewhat pendulous, and the walls relaxed. Close to and on the right of the median line was an easily movable tumor, which was painful on pressure; to the right and external to this was a second tumor, smaller and ascending with inspiration (gall-bladder). Distension of the stomach with air revealed a dilatation and a descent of the greater curvature to midway between the symphysis and umbilicus. The stomach contents contained an abundance of free acid, but no products of fermentation or decomposition. Further questioning revealed that the patient had suffered from gastralgia.

Diagnosis: Dilatation of the stomach resulting from cicatricial stenosis of the pylorus, and hypertrophy of the muscularis as a result of an ulcer at this point. The proof of this was the continuous improvement and gain in strength after methodical lavage and suitable diet. No cancerous cachexia was present.

Considering the course of this case a very plausible diagnosis of cancer could have been made in the case without an examination of the stomach contents.

CASE 2.—H. S——, 56 years old, a teacher. The man was of a very large frame, but much emaciated and cachectic. The abdomen was relaxed and very flaccid as in multiparæ. In the umbilical region close to the surface could be felt a broad, flat, slightly nodular tumor, which reached on the right to the anterior axillary line and on the left to the parasternal line. Deep inspiration gave rise to a feeling of false movement, i. e., the sliding of the abdominal wall simulated the movement of a tumor. The patient was very dyspeptic, suffered severely from belching, and vomited occasionally. It was self-evident there was a tumor of the omentum. The only question in doubt was whether there was also a cancer of the stomach, as indicated by the dyspeptic manifestations. The examination of the stomach contents revealed an abundance of free acid, acidity 50; the filtrate gave a digestive reaction. An involvement was thus excluded. The correctness of the diagnosis was verified at autopsy.

In conclusion I will cite a case from our own practice on the diagnosis of which I invite discussion.

R. N——, aged 47, Swedish, storekeeper. Father died at 50 of delirium tremens; mother at 62 of some stomach trouble of some years' duration. A sister died at 54 of dropsy. Up to five years ago he was well. He then began to have nausea after meals and constipation. This condition soon improved on treatment. Three years ago he was again taken sick with practically the same symptoms after a sea voyage of a short distance. This attack lasted three months. He has passed a few black, tarry stools. He comes complaining of pain in the stomach two to three hours after eating. He has a good appetite, but does not eat, for fear of the pain which he knows will come on. He has lost twenty pounds in the last three weeks.

On examination he is emaciated, but not cachectic. Tongue coated. Temperature and pulse normal. Abdomen retracted. No tumors perceptible. Stomach not dilated. Kidneys and heart normal. His stomach contents show the absence of free HCl, total acidity of 34, and combined acidity of 8. No lactic acid. Pepsin present. Erythrodextrin present. A few unchanged red-blood cells, which were brought up at the end of the stomach-tube. Some leucocytes, starch bacteria, fat cells, and fatty acid crystals.

ST. BARNABAS HOSPITAL

MINNEAPOLIS

DEFORMED FOOT

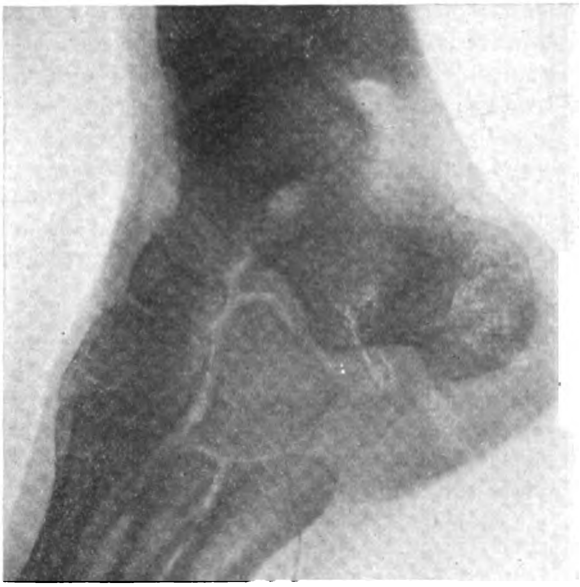
In the Service of Dr. A. E. Benjamin

Mr. A——, aged 18, a student, had an attack of what was diagnosed as infantile spinal paralysis when a child of about 5. There was paralysis of the perineal group of muscles of the left leg. He was taken to a physician several years later, and a brace was applied to support the ankle and correct the deformity. This apparatus he wore for several years, having it changed occasionally to keep pace with the growth of the limb.

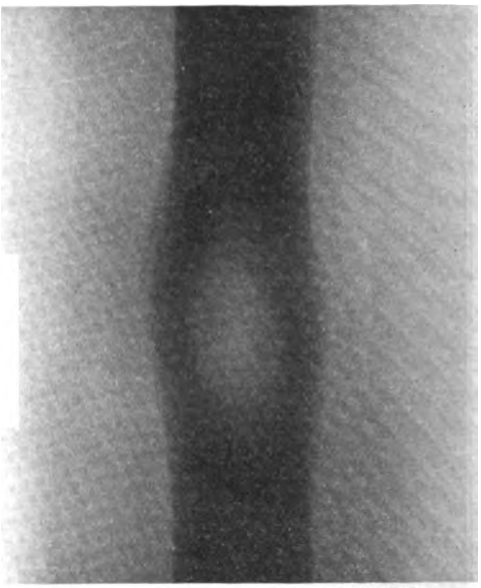
Tenotomy of the tendo-Achillis was performed when he was 12 years old. In August, 1903, when I first saw the young man he had a talipes equinovarus. The apparatus which he was wearing at that time did not strengthen the paralyzed muscle and overcome the force of the opposing group. In addition to the brace, which was simply an ankle brace, a rubber band was fixed to the outer side of the foot opposite the little toe. It was passed upward and inward, and attached to the brace half way up to the knee. This strengthened the muscles and made it possible for him to get around with but little dragging of the outer and anterior portion of the foot.

A muscle-transplantation operation was advised to strengthen the paralzyed group. This has not yet been done, but the patient wears the modified brace and gets about fairly well.

The *x*-ray picture shows the changed relation of the astragalus and the other tarsal bones.



Deformed Foot



Gumma of the Humerus

GUMMA OF THE HUMERUS

In the Service of Dr. C. H. Hunter

Mrs. A——, aged 35; had chancre in 1892, roseola and other secondary symptoms. At different times has had various digestive and other minor complaints apparently of syphilitic origin in spite of a good deal of mercury and iodides.

In 1893 pain in left upper arm began, radiating about the shoulders and downward. Some tenderness about the radial nerve. Numbness of arm and hand. Pain was severe at times;

worse at night. It was thought to be a syphilitic neuritis. Mixed treatment was pushed. Pain and slight tenderness of point over musculospiral nerve would disappear to return again on voluntary abandonment of treatment.

Finally the diagnosis of neuritis not seeming satisfactory an *x*-ray was obtained with the results as disclosed in the cut.

This shadow is interpreted to be that of a gumma in the shaft of the humerus.

We have not been able to find a similar condition illustrated in any *x*-ray cuts at hand.

Under a more vigorous mixed therapy the symptoms have disappeared.

A PERIOSTEAL LIPOMA OF THE HUMERUS

In the Service of Dr. Geo. G. Eitel

Mr. L——, aged 27, a farmer, entered hospital December 3d, complaining of a tumor in his right arm.

His family and past history were unimportant.

Present Illness.—Patient first noticed a slight swelling in the vicinity of the shoulder about four years ago. Two years ago he was able to differentiate a distinct tumor. This was very small, and seemed deep-seated. It gradually increased in size, and two others adjoining it became apparent. Two of the tumors seemed closely attached to the bone. The arm attained twice its normal size, but its function was in nowise impaired. He suffered no pain, and in fact the only subjective symptom was the discomfort resulting from pressure against the side of the chest.

On examination the arm suggested at once the apparance of a sarcoma of the humerus. The history, however, made this diagnosis untenable. The tumor, or succession of tumors, was closely adherent to the upper and middle thirds of the anterior surface of the shaft. It was firm, not sensitive, and the skin covering it was normal in appearance.

At operation a small subcutaneous tumor was first easily dislodged. From the shaft two bony shelves projected, and these gave support to the main tumor, which was about five inches long and three inches thick, and to a smaller one adjacent, both evidently springing from the periosteum.

The tumor, together with the exostoses, were removed. On section they presented a yellowish fatty appearance, the larger one feeling in places distinctly fibrous. There are no areas of caseation.

Mr. Paul Brown, pathologist, made microscopic examinations, and found all three tumors to be lipomata, containing some fibrous tissue. No muscle fibres were made out.

Periosteal lipomata are exceedingly rare tumors.

Von Bergmann mentions their occurrence on the thigh, and Hekoen, in the American textbooks of pathology, states that there have been nine cases in all on record. They are supposed to be nearly always of congenital origin.

CLINICAL MICROSCOPY

Conducted by George Douglas Head, M. D.

CHRONIC PANCREATITIS AND GLYCOSURIA

Minneapolis, Nov. 21, 1904.

Editor of the Lancet:

Upon a subject, the clinical relations of which are still so obscure as are those of chronic pancreatitis, it is a pity that any false impression of diagnostic value should be made; such an impression would seem to grow out of the reference in the department of Clinical Microscopy, in The Lancet of November 1st, to the use of the phenylhydrazine test, which Cammidge suggests in chronic pancreatitis. The recommendation has filtered through an essay of Mayo Robson to a paper by Trevor, and thence to The Lancet with a brief comment upon it which does not appear to cover the ground.

The successful application of the phenylhydrazine test to the urine of the patient suspected of chronic pancreatitis has a certain corroborative value, and no more. It is merely a test for the presence of carbohydrates and allied bodies in the urine, and, of course, usually indicates dextrose. All of the monosaccharides, including both the pentose and the hexose groups and most of the disaccharides, produce the osazone crystals. Glycuronic acid also reacts with it, and is not infrequently present in the urine, although usually in the form of the conjugate glycuronates, which do not respond to the test. The latter, however, frequently combine with glucose. Boiled with acids they are dissociated, and will then give the phenylhydrazine test. Differentiation between the osazone crystals which result from these reactions, is clearly made by their widely variant melting points. . The use of the test in the urine of pancreatitis simply turns upon the fact that in fifty-five per cent of all forms of pancreatic disease, dextrose or some glucose-producing body is excreted. It has no other value than this. But, since glycosuria is not alone dependent upon pancreatic disease, its existence is far from pathognomic.

Until we know more than we know now of the undoubted influence of the pancreas in carbohydrate metabolism, we cannot place much reliance upon the diagnostic value of this test alone.

RICHARD OLDING BEARD, M. D.

REPLY BY DR. HEAD

The above communication to the editor of THE LANCET implies that a false impression was given out by the publication in the department of Clinical Microscopy (THE LANCET, Nov. 1) of Cammidge's test for pancreatitis. As will be noted, the letter is entitled "Chronic Pancreatitis and Glycosuria," and the writer endeavors to show that Cammidge's test is nothing more nor less than a test for the determination of dextrose or some glucose-producing body in the urine.

In Cammidge's original article (the London Lancet, March 19, 1904) he states positively that his test is not one for glycosuria or allied products, but for glycerine, which is not a carbohydrate, but a triacid alcohol. That Cammidge was fully aware of the use of phenylhydrazine for detecting dextrose and leavulose, etc., in the urine is certain from his statements in his article. On page 784 he says: "As the presence of sugar in the urine would obviously vitiate the results thus obtained, it is necessary before proceeding with the test to make sure that the untreated urine does not give a reaction with phenylhydrazine." Cammidge also states that he carried on a special line of experiments to prove that the polysaccharides, namely, animal gum, etc., which split into their component monosaccharides by boiling with dilute mineral acids, and thus give the phenylhydrazine test, were not the substances which produced the reaction in his cases. (See original article in the London Lancet, page 783.)

Cammidge's test hinges on the principle that in the formation of fat necroses, so common in pancreatic disease, the fat of the tissue is broken up by the pancreatic juice into fatty acids and glycerine. The fatty acids combine with lime salts, and form the areas of fat necroses. The glycerine is absorbed into the blood, and is later excreted in the urine. Cammidge uses the phenylhydrazine test to detect the presence of glycerine, which is transformed into glycerose by the action of the nitric acid. Cammidge's test, as given in his original paper, is as follows:

Reaction A.—"The specimen of urine to be examined is filtered, and ten cubic centimetres of the filtrate are poured into a small flask. One cubic centimetre of strong hydrochloric acid is added, and, a funnel having been placed in the neck to act as a condenser, the flask is placed on a sand bath and gently boiled for ten minutes after the first sign of ebullition is detected. A mixture of five cubic centimetres of the filtered urine and five cubic centimetres of distilled water is then poured into the flask, which is afterwards cooled in running water. The excess of acid is now neutralized by slowly adding four grammes of lead carbonate, and, after standing for a few minutes to allow for the completion of the reaction, the urine is filtered through a moistened filter-paper and the flask is washed out with five cubic centimetres of distilled water onto the filter. To the clear filtrate are now added two grammes of powdered sodium acetate and 0.75 gramme of phenylhydrazine hydrochlorate and the mixture is boiled for from three to four minutes on the sand-bath. The hot fluid is then poured into a test-tube and allowed to cool undisturbed. After the lapse of a period, varying with the severity of the case, from one to twenty-four hours, a more or less abundant flocculent yellow deposit is found at the bottom of the tube, and this when examined under the microscope with a 1-6 inch objective is seen to consist of sheaves and rosettes of golden-yellow crystals." Results by this test were found not absolutely trustworthy, and further work was done which culminated in devising a second test.

Reaction B.—"Twenty cubic centimetres of the filtered urine are thoroughly mixed with half its bulk of a saturated solution of perchloride of mercury. After standing for a few minutes, it is carefully filtered, and to ten cubic centimetres of the filtrate one cubic centimetre of strong hydrochloric acid is added. The mixture is then boiled for ten minutes on a sand-bath and subsequently diluted witn five cubic centimetres of the filtrate from the mixed urine and perchloride of mercury solution and ten cubic centimetres of distilled water. After cooling it is neutralized with four grammes of lead carbonate, and the succeeding stages of the operation are carried out as in reaction A."

Cammidge thus summaries his conclusions:

1. If no crystals are found by either the A or B method the pancreas is not at fault, and some other explanation of the symptoms must be sought.
2. If crystals are obtained by the A method and not by the B reaction, active inflammation of the pancreas is present, and surgical interference is generally indicated. (a) The crystals obtained by the A method will in acute inflammation dissolve in 33 per cent sulphuric acid in about half a minute. (b) In chronic inflammation the crystals obtained by the A method will take one or two minutes to disappear.
3. If crystals are found in the preparations made by both the A and B methods there may be—(a) malignant disease of the pancreas, when the crystals will, as a rule, take from three to five minutes to dissolve and operation is inadvisable; (b) a damaged pancreas due to past pancreatitis, when the crystals will dissolve in from one to two minutes; (c) some disease not connected with the pancreas, when the crystals dissolve in about one minute. In the two latter (b and c) the urgency of the symptoms and the condition of the patient must decide the need of an exploratory incision, but there is generally not much difficulty in referring the case to one or other of the groups when the clinical history is considered in conjunction with the result of the examination of the urine.

That this work has not been hastily done or that conclusions have not been reached without sufficient study is proven by the series of cases which Cammidge has to offer. He studied 3 cases of acute pancreatitis, 51 cases of chronic pancreatitis, 15 cases of cancer of the pancreas, and 2 cases of cysts of the pancreas. Typical osazone crystals by the Cammidge test were present in all 3 of the cases of acute pancreatitis, in all 51 cases of chronic pancreatitis, and in 13 of the 15 cases of cancer of the pancreas. Cammidge further states that glycosuria is rare in pancreatic disease. Of 90 proven cases only 5 gave a glycosuria reaction.

It seems to the writer that the chief objection to Cammidge's test is the practical difficulty of making it because of the time consumed and the elaborate chemical procedure required.

We refer the writer of the above letter to Cammidge's original communication, since, it seems to us, he has made an unjust criticism of the test.

GASTRIC CONTENTS IN OLD PERSONS

The importance of knowing the variations in the chemical contents of the gastric juice in persons of advanced age is readily appreciated. Gastric carcinoma in the early stages is often very insidious in its onset, and the physician is constantly seeking chemical aids in its early detection.

Saidelin (Berl. Klin Wochenschrift, Sept. 5, 1904), has made a series of experiments to determine whether achlorrhydria (absence of HCl) was normally present in old people. He made analyses of the gastric contents in a large number of patients over 50 years of age. He came to the conclusion that the gastric juice maintains its usual chemical constituents in advanced age, and is very slightly altered. However, he found that achlorrhydria exists in many cases, and there seems to be some relationship between it and arteriosclerosis of the vascular system. The author says that in elderly persons care must be taken in ascribing any diagnostic significance to the absence of free hydrochloric acid as a symptom by itself.

NORTHWESTERN LANCET
A SEMIMONTHLY MEDICAL JOURNAL
The Official Organ of the Hennepin County Medical Society
W. A. JONES, M. D.................. EDITOR
Editorial Office, 515 Pillsbury Building
W. L. KLEIN, PUBLISHER

SUBSCRIPTION, $2.00 A YEAR.

W. D. LONG, NEW YORK AGENT,
119 Naussau ... ... New York City

839-840 Lumber Exchange........................ Minneapolis

DECEMBER 15, 1904

THE PASSING OF 1904

With this issue THE LANCET closes its 34th year of publication, and it is gratifying to be able to say that it closes also the most successful year in its history. Its circulation has been materially increased, its field enlarged, its sphere of usefulness made wider, and its financial returns have been the largest in its history. One feature alone has given us real concern, and that is our inability to publish promptly all the papers offered us. This is a natural consequence of our enlarged field and of the largely increased amount of medical literature produced in the West and Northwest. Happily, the early publication of the transactions of the State Medical Association greatly relieved us in this direction, for we cannot well publish papers that have already appeared in print.

The loyal support received from the country has been very gratifying, and the many kind words spoken of our efforts to make THE LANCET helpful to the general practitioner have been thankfully received. But we wish to repeat that a word of kindly criticism which enables an editor to see faults in his work, and to improve it, is the kind of criticism most earnestly sought and most infrequently received. If every man who takes a medical journal would occasionally point out to the editor what he finds useful, what he finds useless, and what he would like to have added to his journal, the influence for good upon the profession would be almost inestimable. Will not the readers of THE LANCET undertake to do just a little in this line during 1905?

The editor repeats his yearly request for material, clinical and hospital reports, articles that are based upon original observation and research, and, above all, a personal and loyal interest in the journal.

DEATH OF THE EPIPHANY PRIEST

The Rev. Kroeger, who became separated from the Catholic church in order that he might follow the healing art, is an illustration of the success of the man who has a system. It is said that the priest received a fine education in medicine in the old country, and that while attending to his parish duties he frequently prescribed for his parishioners with such success that his time was wholly occupied with the sick, and his church duties were neglected. His practice became enormous, and he was enabled to build large hotels, a sanitarium, and a chapel from his earnings. His clinic was attended by patients from the neighboring states, and it is reputed that he saw more than one hundred patients every day.

Patients who consulted Father Kroeger said his methods were exceedingly simple, and his work systematized to a remarkable degree. The patient was ushered in; the name, age, and address annotated; an exceedingly brief history was permitted, and in some cases no clinical symptoms were asked; the patient being hurriedly *x*-rayed, a diagnosis given, and medicine from a barrel was bottled, a fee collected, and the interview terminated. A simple, systematized, and awe-inspiring method is usually successful with the masses. The element of hopeful suggestion is in such an atmosphere, and the benefits from such a procedure must be beneficial in many instances. An occasional apparently brilliant cure is quietly but skillfully brought to the attention of the people through the newspaper or by word of mouth, and again the human tide surges toward Epiphany.

The priest is so occupied by seeing new faces every few minutes that his methods grow more and more simple. One barrel of medicine suffices for almost any known or presumed disease. If the patient is skeptical a smaller barrel is tapped, and a more patent drug is employed. Such is the influence of suggestion.

The majority of patients who consulted the priest, and were relieved of their maladies, had for the basis of their complaints a faulty imagination. The others who were temporarily impressed, but whose symptoms returned, were either non-suggestible or had real maladies which were destined to follow the regular course of resolution or repair. If a record could be completed of all of the patients who visit regular practitioners who are striving honestly to practice medicine, the percentage of recoveries or improvement would greatly exceed the reported cures of the man who makes medicine a farce. This man practiced upon the credulity of the people, and he was looked upon as irregular in medicine, as well as an irregular priest; yet he succeeded in a measure.

The people must learn the difference between the fakir and the honest practitioner. The comparison between the man who cares nothing about your ancestral or personal and clinical history, and who relies upon a so-called *x*-ray machine badly used and a barrel of medicine, is not to be considered in the same breath with the trained physician who uses every known scientific method to make a real diagnosis. The people often remark that the quack has as many cures to his credit as the trained physician, that both lose patients, and, on the whole, there is but little difference between the methods and the schools. In a measure, this is true, but the real physician is the man who knows what he is doing, why he is doing it, and can give good reasons for his methods. The fakir gives no reasons; he simply looks wise, and collects his fee.

The average quack is a quack at heart, and his methods are mainly for the purpose of diagnosing the size of his client's purse. The ignorant quack is so inflated by attention that he soon becomes a monster, and is unable to restrain his speech or himself, and is obliged to shift from place to place, devouring all that comes within his reach. Such men do not last. The real quack has a system which runs itself without much friction. This commentary is a sad one when we consider the physician who is well qualified to practice medicine, but who is not aggressive, but is willing to wait for recognition and who does his duty faithfully, honorably, and with satisfaction to his patients and himself.

DOES INSURANCE BREED MALPRACTICE SUITS?

The above is a pertinent question in view of the fact that many and large verdicts seem to be obtained against physicians simply because they are insured, and a corporation will have to pay the verdict. In the recent St. Paul case it was the opinion of those who watched the progress of the trial that a verdict of $14,500 would not have been given had not the fact that the surgeon was insured been learned by the jury. The unfortunate feature of these verdicts is not that the insurers have to pay, for they will simply collect the cost of insurance in increased rates, nor is it so serious that insurance consequently comes high. The trouble is that these verdicts injure the reputation of the men against whom they are found.

If this form of indemnity tends to breed suits and to increase the number of verdicts obtained, the professional men who carry insurance may well pause to consider whether their own interests would not be subserved by taking another form of insurance, namely, a form that guarantees against costs of prosecution only, and not against verdicts. We should be slow to urge such a course except from the interests of the insurers, however great the remote benefit to the profession may seem; but the tendency of juries to be so biased as to render judgment where a person is insured, appears to be too firmly established to be ignored. On the other hand, the value of acquittal in case of such charges is beyond money value. And there is still another factor to be considered in deciding as to the best form of insurance. Suppose a surgeon or physician decided to set aside a limited amount for insurance. If this amount will buy only $5,000 indemnity, he still runs the risk of such verdicts as named above—a risk actually increased, if not wholly created, by this form of insurance. On the other hand, a much smaller sum will insure him against costs of prosecution, give him the assistance of the eminent counsel of the insurance company, and still enable him to select the best lawyers in his own state to manage his case. Now, we do not mean to infer that the indemnity insurance companies do not employ able attorneys; but we do believe the form of insurance has serious objections that should be carefully weighed by any medical man who so values his reputation that he will not put it in jeopardy. A number of companies issue indemnity insurance, but we believe the Physicians' Defense Company, of Ft. Wayne, Ind., is the only national company insuring exclusively against the cost of prosecution. This company has done a large business in the Northwest, and we think them worthy of the utmost confidence. It certainly behooves the medical profession carefully to observe and investigate the results of the two forms of insurance—indemnity and defense.

CORRESPONDENCE

UNDER FALSE COLORS

Minneapolis, Nov. 30, 1904.

Editor of the Northwestern Lancet:

I am informed that a certain agent is using my name in the exploitation of a certain ozone generator in the form of a letter written upon a letter-head of mine and referring to my use of the machine. I wish to announce that this use, both of my name and stationery, is altogether without my knowledge or consent and in no way has my authority.

The brief observation I have had of this machine would not warrant its endorsement, and I am not given to lending my name for advertising purposes.

Will you do me the favor to publish this statement.

Richard Olding Beard.

NEWS ITEMS

Dr. G. Moorehouse has located at Owatonna.

Dr. J. P. Corry, of Janesville, has moved to Alma City.

Dr. T. E. Hall has moved from Ormsby to La Crescent.

Dr. P. E. Kierland, of Audobon, has moved to Mehnomen.

Dr. J. L. Livingstone, of Pelican Rapids, will locate at Wells.

Dr. Edward Myer, of Brillion, Wis., has located at St. Cloud.

Dr. W. B. Parsons, of Missoula, Montana, expects to build a hospital in that city.

Dr. Joseph G. Dillon, a graduate of Johns Hopkins, has located in Fargo, N. D.

Dr. O. B. Bye, of Hallock, Minn., has gone to Sweden for special post-graduate work.

Dr. D. A. Nicholson, of the State Hospital at St. Peter, has decided to locate in Seattle, Wash.

Dr. Edmund McLaughlin, after an absence of eight years, has returned to Winona to resume practice.

Dr. Thos. A. MacKenzie, formerly employed by the Cunard Steamship Company, will soon locate in Helena, Montana.

Dr. F. R. Patterson, of New Rockford, N. D., was married last month to Miss Lauretta Isin, of Grand Rapids, Mich.

Dr. J. H. Williard, of Lewiston, Montana, has gone East for the winter to do post-graduate work, mainly in New York City.

Dr. H. H. Hodgson, who has been practicing for five years at Fisher, has decided to go West, but he will spend the winter in special study in Chicago.

Dr. F. E. Wheelon, of Esmond, N. D., was married last month to Miss Blanche Jensen, of Antigo, Wis. Dr. Wheelon is a graduate of the State University, class of 1900.

Dr. A. O. Arneson, of Northwood, N. D., has moved to Aneta, in the same state, to take care of the practice of Dr. Rolf Meidell, who has gone to Europe for a year's special study.

Dr. W. J. Proctor, of Valley City, N. D., died last month. Dr. Proctor graduated in medicine in Toronto, and had travelled extensively in Europe and the East and in Africa. He died at the age of 36.

The State Board of Medical Examiners, of Montana, has revoked the license of Dr. Frank E. Donalson, of Great Falls, for unprofessional conduct. Dr. Donalson formerly practiced in Wisconsin. His offense was unethical advertising.

Dr. S. D. Moore, of Jamestown, N. D., is doing post-graduate work at the New Orleans Polyclinic. This institution is becoming quite popular with northern physicians who seek the rest of a mild climate while doing special hospital work.

Dr. William McGillivray, of Pipestone, died last month. Dr. McGillivray was a graduate of the Toronto University, and came to Minnesota immediately after graduating in 1890. He has practiced ever since at Pipestone. He was very highly respected.

POST-GRADUATE WORK

Doctor: If you want practical post-graduate work during fine season in the delightful city, write for particulars. New Orleans Polyclinic, P. O. Box 797, New Orleans.

INDEX TO VOLUME XXIV

ARTICLES

Page
Anesthesia, A Note on Primary Ether, for Short Operations 107
Angina, A Case of Ulcerative, with the Fusiform Bacillus and Spirillum of Vincent in the Exudate 157
Bacteriemia, Recent Investigation of Certain Diseases Associated with: Typhoid Fever, Pneumonia, Scarlet Fever, etc 79
Borax and Boric Acid, A Study of the Effects of, on the Human Body, with Particular Reference to their Use as Food Preservatives 219-243
Bow-Legs, Supracondylar Osteotomy for 4
Cancer and Ulcer of the Stomach, The Etiological Relationship between 300
Cancer, Uterine 237
Carcinoma, A Case of Gastrectomy for 365
Catarrh and Predisposition 5
Diabetes, Treatment in 375
Diphtheria 455
Doctor, the Social Status of the 358
Elbow, Resection of 79
Electrical Injuries, A Study of 277
Embolism of the Axillary Artery Following Chronic Endocarditis, with Report of a Case 379
Endocarditis, Septic 39
Esophageal Stricture, Gastrostomy in 333
Expert Evidence in Court 381
Eyeball, Penetrating Wounds of the 363
Flat Foot or Splay-Foot, Pes Valgus 117
Graft, Medical 195
Gynecology, Surgical 401
Hay-Fever Investigations, Prof. Dunbar's 398
Heart and Arteries, Degenerative Diseases of the 303
Heart-Sounds, Non-Valvular 199-216
Hernia, Ventral 125
Hospital Organization 137
Jaw, Fractures of the Lower 21
Kidney Lesions, Locating Surgical 257
Mastoid Abscess 43
Maxillary Sinus, Some Empyemas of the 404
Medical Organization 338
Page
Medicine, The Art and Science of 282
Myocarditis, Prognosis and Treatment of Chronic 221
Neurology, Notes on Some Recent Progress in 360
Ophthalmia Neonatorum, the Prophylaxis of 213
Otitis Media, Acute 145
Otorrhea, Some of the Difficulties to be Overcome in the Radical Mastoid Operation for the Cure of Chronic Purulent 295
Ovarian Cyst and Pus-Tube 79
Pancreatitis, the Surgical Treatment of 453
Pelvic Inflammation, The Treatment of the Early Stage of, with Some Points in Diagnosis 175
Perineal Prostatectomy 66
Peritonitis, A Case of Disseminated, Miliary, Tuberculous, with Ileus, Enterostomy, and Later Resection of a Portion of the Intestine—Recovery 340
Pneumonia Pathology; Empyemia as a Complication 395
Poisoning, A Note on Tyrotoxicon 122
Pott's Fracture, Osteotomy for an Old, with Deformity 79
Prostate, Diseases of the, with Especial Reference to Hypertrophy of the Organ 61
Prostate, Surgery of the 1
Physical and Chemical Forces in Vital Operations 99
Scientific Methods and Medical Education 318
Singultus 384
Stomach Analysis and Its Value 460
Sundries 355
Syphilis, Some Ideas Regarding the Nature of 286
Therapeutic Facts and Principles 315
Thyrolingual Duct, Cyst of the 79
Tonsil, The Submerged, and Its Operative Treatment 161
Tuberculosis, A Case of Primary Intestinal, Involving the Appendix and Cecum, Removal of the Appendix, the Cecum, and a Portion of the Colon and Ileum; Ileocolostomy—Recovery 340
Tuberculoses, Some Local 105
Tuberculosis, The Early Diagnosis of 181
Typhoid Fever, Complication and Sequelæ of 259

HOSPITAL BULLETIN

Addison's Disease, A Case of 343
Adhesions, the Removal of Three Feet of Small Intestines for the Relief of Unusual Formation of 165
Adrenalin, Necrosis of Soft Parts Following Enormous Subcutaneous Injections of 268
A Hospital's Work for One Month 426
Apoplexy, a Case of in a Young Man 166
Appendicitis, a Case of Traumatic, Associated with Ovarian Cyst 288
Appendicitis with Obstruction, a Case of 267
Artresia of the Vagina 406
Atheroma of the Coronary Arteries, Thrombus, and Dilatation of the Heart 307
Blastomycosis, a Preliminary Report of a Case of 149
Brain Abscess 256
Brain, Primary Sarcoma of the 324
Bronchial Cyst, a 289
Cancer of the Jaw, a Case Operated upon for 150
Case-Recording, the Method of, at St. Barnabas Hospital 29
Cerebrospinal Meningitis Following Pneumonia 47
Cholecystotomy in a Patient 71 Years of Age, with Removal of Four Gall-Stones under Schleich Infiltration Anesthesia, a Case of 72
Colitis, a Case of Ulcerative 185
Cocain and Adrenalin Injections as an Assistant in General Anesthesia 131
Deformity of the Face, Repair of 130
Dermoid Cyst of the Left Ovary with Malignant Degeneration 288
Diabetes Mellitus with Multiple Neuritis, So-called Diabetes Tabes, a Case of 447
Double Vagina and Uterus 34
Diet Work, Hospital 128
Dysentery, Chronic, with the Amebæ Coli in the Stools, a case of 249
Extrophy, Congenital, of the Female Bladder in a Child Four Years Old 269
Extra-Uterine Pregnancy, a Case of 386
Extrophy of the Bladder, a Case of 407
Erysipelas Accompanied by Intestinal Hemorrhage 187
Eyeball, Foreign Body in the Posterior Segment of the, Localized by Means of the X-Ray 250
Femur, T Fracture of, Extending into the Knee-Joint 203
Femur, Pathological Fractures of the 31
Foot, Deformed 464
Fracture of Both Bones of the Right Leg 165
Fracture of Spinous Process 8th Dorsal Vertebra, with Partial Dislocation of Vertebra 207
Fribroma, a, in the Abdominal Wall 228
Gall-Stone, a Case of 111
Gall-Stone, a Case of Large 150
Gall-Stones, the Diagnosis of 69
Gall-Stone with Empyema of Gall-Bladder 326
Gonorrhea in a Young Child 407
Gumma of the Humerus 464
Gunshot Wound, a 92
Hematoma or Apoplexy of the Omentum 228
Hips, a Case of Double Congenital Dislocation of 366
History-Taking, Another Plea for Accurate 367
Hospital Housekeeping—Sweeping 187
Hospitals, the Overcrowding of Our 267
Kidney, Cystic—Severe Hemorrhage on Removal 325
Kidney, Diseases of the, with Complications 89
Lipoma, a Periosteal of the Humerus 465
Muscular Dystrophy, a Case of Primary 387
Nurses, Pupil 50
Obstruction of the Bowels, Two Cases of, One Case Complicated by Tetany; Resection of Thirteen Inches of Ileum—Recovery; Relief of Constipated Bowels—Recovery 187
Obstruction of the Intestines by a Large Gall-Stone, a Case of, with Autopsy Findings 407
Omentum, Hematoma or Apoplexy of 228
Omentum, Primary Sarcoma of 227
Osteomyelitis of Humerus 204
Osteomyelitis and Resection of the Shoulder Joint, with X-Ray Plate, a Case of 70
Ovarium Dysmenorrhea, an Operation for the Relief of 127
Ovarian Cyst—Twisted Pelicle 267
Ovarion Cyst, an Unusually Large 367

NORTHWESTERN LANCET

Page
Pack, the Cold Towel 49
Paravorian Cyst, Cystic Ovaries, and Salpingitis, the Appendix Being Wholly Absent, a Case of 306
Parotid, Mixed Tumor of 229
Perforation, Typhoid 167
Pigmentation, an Unusual Case of 445
Pneumonia, a Case of Central, of the Typhoid Type 149
Pneumonia, Cerebrospinal Meningitis Following 47
Pregnancy, a Case of Extra-Uterine 386
Pregnancy, a Case of Ectopic, Fetus Continuing to Grow Three Months After Rupture 248
Pregnancy, Extra-Uterine, with Symptoms of Appendicitis 205
Prolapsus Uteri, a Report of Three Cases of, One Associated with Gall-Stone Disease 128
Prostate, a Case of Enlarged, Accompanied by Stone in Bladder 228
Prostatectomy, Perineal 229

Page
Pulse, Slow, Two Cases of in Typhoid Fever 108
Rheumatic Iritis, Mild Optic Neuritis (?), and Interesting Nasal Complications, Including Sphenoiditis, A Case of 51
Sarcoma, Primary, of the Brain 324
Sarcoma, Primary, of the Omentum 227
Sarcoma of the Superior Maxilla, Two Cases of 151
Scarlet Fever, Marked by Neuritis and Secondary Desquamation, Raising the Question of Secondary Infectiousness, a Case of 110
Skin-Grafting for the Repair of a Crushed Foot, Case of 109
Typhoid Fever with Blood Culture, Report of a Case of 127
Typhoid Fever, Two Cases of Slow Pulse in 108
Typhoid Perforation 167
Vagina, Artresia of the 406
Veins, the Treatment of Varicose 32

CLINICAL MICROSCOPY

Albumosuria 112
Anemic Blood, Ring Bodies in 189
Appendicitis, Leucocyte Count in 271
Bacillus, Opper-Boas 189
Bile Pigments in Urine, Chloroma, a Test for 52
Blood, Effects of High Altitudes on 410
Blood-Pressure in Disease 388
Blood-Pressure in Surgery 152
Blood, Ring Bodies in Anemic 189
Blood-Stain, a Good 93
Cammidge's Urine Test for Chronic Pancreatitis 410
Casts and Albumen in Urine, Significance of 310
Chronic Pancreatitis and Glycosuria 465
Congestion, Passive, of Kidneys 409
Cysto Diagnosis of the Pleural Effusions 449
Cystitis, Pyelitis and, Differential Diagnosis 208
Cyto—Diagnosis 208
Ehrlich's Diazo Reaction in Pulmonary Tuberculosis 367
Ehrlich's Diazo Reaction 52
Eosinophile Leucocytes 112
Gastric Contents in Old Persons 467
Granules in the Red Blood Cells of Man 169
Hyaline Casts in Urine 251
Iodine Reaction in the Blood of Children 270
Iodophilia 132
Kidneys, Passive Congestion of 409
Leucocyte Count in Appendicitis 74
Leucocyte Count in Appendicitis 270
Leucocyte or Pus Casts in Urine 152
Leukemia 290
Nephritis, Casts in Chronic Interstitial 132
Nephritis of Infants 230
Nephritis, Oxaluria and 230
Nephritis without Casts in the Urine 74
Nitric Acid Test Applied to Urine 368
Oppler-Boas Bacillus 189
Oxaluria and Nephritis 230
Pancreatitis, Cammidge's Urine Test for Chronic 410
Pernicious Anemia and Its Relation to Gastric Digestion 309
Pleural Effusions, Cystodiagnosis of the 449
Polythemia, Chronic, with Cyanosis and Enlarged Spleen 289
Pyelitis and Cystitis, Differential Diagnosis of 208
Red Blood Cells of Man, Granules in 169
Renal Calculus, Diagnosis of 74
Renal Function, Determination of 448
Renal Tuberculosis, Diagnosis of 112
Sedimentation of Urine 93
Spotted Fever, Hematozoa in 93
Tuberculosis, Ehrlich's Diazo Reaction in Pulmonary 367
Tumors, Malignant, Diagnosis of 270
Urine, Black 169
Typhoid Fever and Septic Infections 52
Uffelmann's Lactic Acid Test 132
Urine, Hyaline Casts in 251
Urine, Leucocyte or Pus Casts in 152
Urine, Nitric Acid Test Applied to 368
Urine, the Sedimentation of 93
Urine, Significance of Casts and Albumen in 310

EDITORIALS

Light of the World 14
Epidemic Diseases 14
"All Doctors Look Alike to a Stenographer" 15
Consolidation of the Lancet and the Medical Dial 35
Dr. H. M. Bracken 35
Dr. C. H. Hunter, President 36
The Minneapolis Journal 36
Visit of Prof. Hektoen 53
More Trouble for Doctors 53
Hospital Management 53
A New Department—Clinical Microscopy 54
Detention Hospital and a Hospital for Incurables 75
Nerve Fibres as Carriers of Disease Products 75
Dr. Tyson to Address the Hennepin County Medical Society 94
Dr. Ludvig Hektoen's Address 94
Death of Dr. Franklin Staples 94
Home for Incurables 94
A Daily Medical Journal 113
Workhouse Liquor Cure 113
Injury to the Spine 114
The Physician as a Business Man 114
Dr. James Tyson at the Annual Meeting of the Hennepin County Medical Society 133
Asbury Hospital Staff 133
Reckless Prescribing 134
Dr. Tyson's Visit 153
The Lodge Doctor 154
Hypodermatic Medication 170
The Discoverer of Anesthesia 170
The Passing of the Tonsillotome 171
The Minnesota Anti-Medical Society 190
Meeting of the A. M. A 190
Certified Milk 191
State Medical Society 209
Unsectarian Medical Societies 209
Professional Abuses 209
The State Medical Society 231
A Brand New Medical Science 231
A Medico-Legal Case 231
State Reciprocity in the Recognition of Diplomas 231
The Professional Steerer 232
Dr. James Henry Dunn 252
The Minnesota State Medical Society 253
The Address of Dr. Ferguson 254
The Satanic Fourth 254
The A. M. A. Meeting 271
Side-Lights of the A. M. A. Meeting 271
Monotonous, but Interesting and Valuable 272
Vacation Pleasures 291
The Meat Strike 291
The Aphasic and His Re-education 292
A Cordial Invitation 311
Diseases of the Pancreas 311
The State Fair 312
The Surgical Treatment of Obstetrical Paralysis 327
Atheroma and Arteriosclerosis 328
"Chiropractic" 329
Transactions of the Utah State Medical Association 345
The Perils of Tobacco 345
Decapsulation of the Kidneys 346
Transactions of the Minnesota State Medical Association 347
Political Advertising Methods 369
Regenerative Changes in Visceral Organs 370
A Hospital for the Aged and Infirm 370
Nerve Stretching in Therapeutics 371
The Chiropractic Doctor 389
Pollentine 389
The Work of Prof. Dunbar 411
City Water Supply 411
Another Pioneer Gone—Dr. Arthur Young, of Prescott, Wis 412
Technical Assault 427
Dr. Thomas L. Laliberte 428
Christian Science, Again 428
Buttermilk 450
Abstemious Physicians 450
The Passing of 1904 468
Death of the Epiphany Priest 468
Does Insurance Breed Malpractice Suits 469

BOOK REVIEWS

Page
Allen.—Radiotherapy, Phototherapy, and High Frequency Currents 330
Anders.—A Text-Book of the Practice of Medicine... 211
Bishop.—Diseases of the Nose, Throat, and Ear, and Their Accessory Cavities 430
Buck.—A Reference Handbook of the Medical Sciences 373
Davis.—Handbook of the Anatomy and Diseases of the Eye and Ear.... 451
Dawbarn.—The Treatment of Certain Malignant Growths 18
Dudley.—The Principles and Practice of Gynecology.. 393
Edebohls.—The Surgical Treatment of Bright's Disease 430
Ewing.—Clinical Pathology of the Blood.... 135
Fox.—Diseases of the Eye.... 135
Hansell.—Text-Book of Diseases of the Eye.... 429
Hare.—Progressive Medicine....19, 452
Harrington.—A Manual of Practical Hygiene for Students, Physicians, and Medical Officers.... 37
Head.—The Practical Medicine Series of Year-Books. 172
Hill.—Pain and Its Indication.... 192
Hyde.—A Practical Treatise on Diseases of the Skin.. 430

Page
International Clinics 330
Jackson.—The Ophthalmic Year-Book.... 293
Jacoby.—Electrotherapy 115
Kilmer.—The Practical Care of the Baby.... 135
Magee.—Epitome of Surgery.... 451
Medical Epitome Series.... 172
Musser.—Medical Diagnosis 273
Oppenheim.—Diseases of the Nervous System.... 156
Pearce.—A Practical Treatise on Nervous Diseases... 155
Reynolds.—Veterinary Studies for Agricultural Students 211
Robinson.—Arteria Uterina Ovarica.... 451
Roger.—On Infectious Diseases. Their Etiology and Treatment 96
Simon.—A Text-Book of Physiological Chemistry.... 451
Von Behring.—The Suppression of Tuberculosis.... 429
Von Bergmann.—Surgery....192, 273, 372
Von Leube.—Medical Diagnosis....
Wassermann.—Immune Sera, Hemolysins, Cystotoxins, and Precipitins.... 273
Wood.—The Commoner Diseases of the Eye: How to Detect Them and How to Treat Them.... 193

CORRESPONDENCE

A History of the Organization of the Department of Tuberculosis in Minneapolis.... 16
A Medical Society Picnic.... 331
Certified Milk 331
Society Meetings 372
Prof. Dunbar and His Hay-Fever Toxin and Anti-Toxin 391
Under False Colors.... 470

TANFORMAL

(WARNER & CO.)

CONTROLS THE DIARRHŒA OF TYPHOID AND OTHER INFECTIOUS DISEASES OF THE INTESTINAL TRACT, INHIBITS THE DEVELOPMENT OF MICRO-ORGANISMS.

ACTS AS AN ENERGETIC INTESTINAL ASTRINGENT AND ANTISEPTIC.

UNCHANGED AND INERT IN THE STOMACH.

PHYSIOLOGICAL ACTION COMMENCES IN THE DUODENUM AND CONTINUES THROUGHOUT THE ENTIRE INTESTINAL TRACT.

DOES NOT DISORDER DIGESTION NOR DERANGE THE STOMACH; ELIMINATED BY THE BOWELS AND KIDNEYS; EXERTS AN ANTISEPTIC ACTION AND RENDERS THE FECES AND URINE STERILE.

SAMPLES AND LITERATURE ON REQUEST.

WM. R. WARNER & CO.

Manufacturing Pharmaceutists,

PHILADELPHIA, NEW YORK, CHICAGO, NEW ORLEANS.

Messrs. WM. R. WARNER & CO., PHILADELPHIA.

Kindly send Samples and Literature of Tanformal to

Dr. ....

No. and Street ....

City .... State ....

COUNTWAY LIBRARY
HC 3WDI 9

NB-623